

RESEARCH REVIEW

Office of Research and Technology Transfer

July 1994

Look Forward to One Big Library

When the Committee on Institutional Cooperation electronically combines the collections of its 13 member libraries, the catalog will list more than 58 million volumes and 500,000 serials—10 times the size of the University of Minnesota libraries and probably the largest library collection on the planet.

Here at the University of Minnesota, we will have ready access to the top-ranked math libraries at Michigan and Illinois and the Africana collection at Northwestern, for example. Other schools will have ready access to Minnesota's nationally important Social Welfare History Archives, automated map library and other major collections.

In two to three years, as the CIC sees it, you and I will be able to sit at our terminals, search the catalogs of all 13 libraries, and hardly notice we've left home. When we find volumes at Purdue or the University of Chicago that we want, a few key strokes will place our orders, then the books will come to us by mail within a few days.

"Three years from now, if you find a book at Illinois, you will be able to request it from your terminal," says Thomas Shaughnessy, the University's chief librarian. "Our goal is a 48-hour turnaround from Penn State to Minnesota," says Roger Clark, director of the CIC.

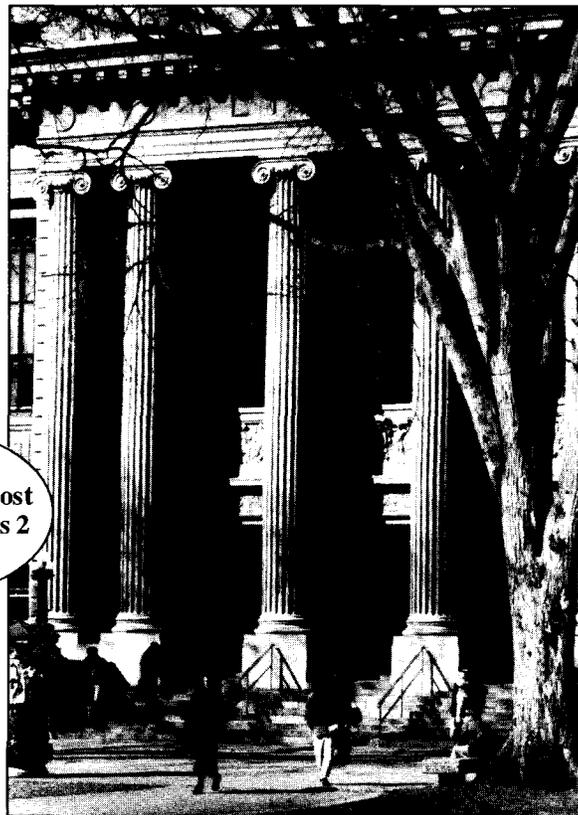
The Committee on Institutional Cooperation is a mechanism by which 13 research universities of the Great Lakes region collaborate. Director Clark calls it the "academic analog to the Big Ten athletic conference." (For a list of the CIC institutions, see the sidebar to this article, page 6.) The members of the committee are provosts and academic vice presidents from the member universities, Senior Vice President Ettore Infante in Minnesota's case.

The CIC's work "spans all areas of university activity except intercollegiate athletics," says Clark. CIC created the CICNet, the electronics that connect seven states to NSF's Internet backbone. CICNet's library services include providing Internet access to about 600 electronic journals.

Collaboration among the CIC libraries is such a large part of the CIC's work that this year it is creating an office devoted

(Continued On Page 6)

New Indirect Cost Rates, see pages 2 and 3.



Inside

New Submission Date for Misconduct Report	2
NSF: Revised Grant General Conditions	2
UM Indirect Cost Rate Changes	3
Librarian Speaks on Information Advisory Council	3
IRB Human Subjects	4
Daniel Joseph Named Regents Professor	4
ORTTA Efficiency and Effectiveness Targeted for Improvement	5
Graduate School News	7
Animal Care: Points to Keep in Mind and Seminars	10
EPRI Biotechnology Center	10
Bayh Criticizes Commerce and Defense Technology Transfer ..	11
Program Information	12
Faculty Research, Training and Service Awards	15
SPIN	18

Misconduct Report

The Office of the Vice President for Research has advised ORTTA that the submission date for filing of misconduct reports has been changed from 2/23/93 to 3/1/94. Effective immediately, please use this date on NIH proposal submissions and any other forms requiring such information.

If you have questions, call Mark Brenner, Office of the Vice President for Research, 6-0309, or an appropriate ORTTA grant administrator.

National Science Foundation NSF Grant General Conditions

In May, the National Science Foundation (NSF) issued revised Grant General Conditions (GC1). The most significant change is in Article 4, No-Cost Extensions. It changes the length of the one-time, no-cost extension that ORTTA can approve from 6 to 12 months.

A copy of the revised GC1 is available from ORTTA and may be requested by calling 624-0895.

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Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated June 13, 1994;** this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know which rate to use for a proposal, call ORTTA Grant Administration, 624-5599, to be put in touch with the appropriate grant administrator. If you have questions on indirect cost rate development, please call Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; Liz Warren, 626-9895; or Linda Lorenz, 624-6862.

	07/01/94 06/30/95
Research	
On-Campus . . . . .	.45.00%
Off-Campus * . . . . .	.24.00%
SAFHL . . . . .	.45.00%
Hormel . . . . .	.45.00%
Other Sponsored Activity	
On-Campus . . . . .	.30.00%
Off-Campus * . . . . .	.24.00%
Instruction	
On-Campus . . . . .	.50.00%
Off-Campus * . . . . .	.26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Assistant	Civil Service
7/1/94 - 6/30/95	23.0%	43.7%	29.8%
7/1/95 - 6/30/96	24.6%	43.9%	31.8%
7/1/96 - 6/30/97	24.9%	44.9%	32.7%

For questions regarding fringe benefit rate development or the breakdown of charges, call Vivian Fickling at 624-2009.

Rate changes will be reflected in this section.

Research and Technology Transfer

UofM Indirect Cost Rate Increased to 45 percent on July 1

The University's rate of recovery for indirect costs of research increases from 40 percent to 45 percent for fiscal year 1995. The Office of Research and Technology Transfer Administration (ORTTA) was notified of the new rate in early June by the federal negotiator from the Department of Health and Human Services (DHHS) who reviewed ORTTA's proposal requesting the increase.

All proposals submitted to sponsors allowing the federal rate on or after July 1, 1994, must include the new indirect cost rate of 45 percent.

Indirect costs of research have gained national attention in the two years since Stanford University was accused of charging some expenses inappropriately. The federal government then investigated indirect cost practices at several other major research universities and found other questionable practices. This scrutiny and related national publicity have resulted in calls for more accountability in the system by which universities recover the indirect costs of research. This has led to changes in the document that governs direct and indirect cost practices, OMB Circular A-21, "Cost Principles for Educational Institutions," including new definitions of allowable indirect costs, restrictions on direct charging of secretarial and clerical salaries and expenses, and requirements for systems that institutions use to calculate their indirect cost rates.

At the University of Minnesota, the indirect cost rate was reduced from 44 percent to 40 percent in fiscal year 1992. This reduction occurred because the University's systems for calculating the rate were not accepted as adequate by the federal negotiator. The rate of 40 percent placed the University 97th among the top 100 research universities in terms of indirect cost recovery.

To improve the University's accountability and to be financially responsible to the federal and state governments, the Board of Regents last summer approved a major review of methods used to develop the indirect cost rate. This review was conducted by ORTTA with the assistance of external consultants and with the participation of many departmental and central administrative staff. The review led to improvements in systems used to inventory equipment, gather space data, and account for indirect costs. These improved systems enabled ORTTA staff to develop an indirect cost proposal that was favorably received by the DHHS negotiator, who accepted the proposal to increase the University's indirect cost rate.

The new rate of 45 percent will move the University close to the median of rates charged by Big 10 and other public universities.

As in the past, the direct costs of existing grants will not be reduced to pay for the higher indirect cost rate. However, if funds are available at the end of a grant period and the sponsor allows rebudgeting, additional indirect costs will be calculated to make up the difference between the old and new rates. See page two for off-campus and other indirect cost and fringe benefit rates.

Please address questions to one of the grant administrators who usually handles proposals in your area of research (see directory on page 19).

Librarian Speaks on Information Advisory Council

The hard part of building the information superhighway is not the hardware, Toni Carbo Bearman told Twin Cities librarians recently, it's the indexing. "How are we going to find what's out there—that's the biggest challenge for the national information infrastructure. We really don't want the *entire* Library of Congress on our laptop computers. The indexing is an enormous challenge."

Bearman is a member of the National Information Infrastructure (NII) Advisory Council, a group appointed to advise the U.S. Department of Commerce about the federal role in creation of the NII. The council met in St. Paul on June 20, its first meeting outside of the Washington, D.C., area. Bearman then spoke to a meeting at the University's Humphrey Center the next day. That meeting was sponsored by the University libraries and Metronet, a Twin Cities library association.

The information highway will not make librarians obsolete, stressed Bearman. They must continue to be the expert searchers and teachers of searching. Members of the advisory council, as they conducted literature searches for council business, were struck by how quickly the Internet can overwhelm users, said Bearman. They know that the information highway will require people trained in its use.

Bearman spent much of her presentation listing parts of the advisory council's mission. "We are to advise the secretary of commerce on everything, basically, related to the development of the NII," she said. The list of issues includes "a vision for evolution" of the NII, the impact of existing and proposed regulations, lifelong learning, health care, national security, interconnection, international issues, universal access, privacy, security, and copyrights and intellectual property.

(Continued On Page 17)

IRB: Human Subjects

Changes in Continuing Review/Renewal of Approval Requirements

The ongoing or *continuing review* of research already approved by the IRB has been expanded based on feedback from regulatory agencies such as the Office for Protection from Research Risks (OPRR) and the Food and Drug Administration (FDA). Every researcher is required to report "no less than annually" on the status of ongoing research projects that involve human subjects. The "renewal request" will continue to follow the same notification procedures from the IRB office, i.e. a written notice anticipating the annual renewal and expiration data will be sent to the PI from the IRB office. However, continuing review forms are being revised and will include requests for the following information:

1. The number of subjects enrolled since the last review.
2. The total cumulative number of subjects.
3. The results of the research to date, including:
 - a. unanticipated risks or adverse outcomes observed, and
 - b. trends suggesting that one treatment may be significantly better or worse than the other(s).
4. Any difficulties in recruitment or retention of subjects, including the number of subjects who withdrew from the study, and the reasons.

5. Any proposed changes to the research protocol.
6. Any proposed changes in principal investigators.
7. A copy of the consent form currently in use (as most-recently approved by the IRB).
8. Documentation of FDA approval for the use of all investigational drugs, biologics or devices. If one or more products used in the research have been granted approval by the FDA since the IRB review, documentation of the FDA action is required.

Researchers should begin to prepare their data collection forms and processes to accommodate requests for this information.

Researchers should also be aware that new federal guidelines on the inclusion of women and minorities in research will require additional accounting for subject profiles. The requirement and formats are being developed. Requests for information on gender and minority distribution will be forwarded to researchers to coincide with ongoing review schedules.

For more information, please call the IRB at 612/624-9829.

Daniel Joseph Named Regents' Professor

Daniel Joseph, professor of aerospace engineering and mechanics, was named a regents' professor in June.

Joseph is an expert in fluid mechanics and developed the theory of stability in that field. He is known for his studies of how water can serve as a lubricant for thicker liquids, such as crude oil, in pipelines.

Joseph joined the University in 1963, and in 1991 was appointed the Russell Penrose Professor of Aerospace Engineering and Mechanics. He is the only member of the faculty to be elected to the National Academy of Engineering, the National Academy of Sciences, and the American Academy of Arts and Sciences.

Joseph earned a bachelor's degree in sociology at the University of Chicago, then bachelor's, master's and doctoral degrees in mechanics and mechanical engineering at the Illinois Institute of Technology.

Regents' professors are named for their national and international eminence and receive \$10,000 annual stipends through the University of Minnesota Foundation. Joseph's appointment fills the vacancy left by the retirement of English professor George Wright.

Gorham Also Joins National Academy of Sciences

Eville Gorham, Regents' Professor of Ecology, Evolution and Behavior, was elected to the National Academy of Sciences on April 26.

In May, *Research Review* reported Gorham's joining the American Academy of Arts and Sciences and briefly described his work. Gorham is best known for helping discover acid precipitation and bring it to the world's attention.

Research and Technology Transfer

ORTTA Efficiency and Effectiveness Targeted for Improvement

Seeking to simplify and improve ORTTA's information processing and service to clients, a review team has recommended changes in hardware, software, information flow and organizational structure.

The review team consisted of Win Ann Schumi and John Pint of ORTTA, Barbara Dahm of AIS, and Bruce Vatne, a consultant from outside the University. From October 1993 through March 1994, the team reviewed ORTTA's processing of proposals and awards, and its financial reporting. The team worked in three areas of concern: customer dissatisfaction, untimely award processing and financial reporting, and an increase in ORTTA staff workload.

Recommendations

The review team recommended that ORTTA:

- Work to replace paper documents with electronic communications, developing new databases and electronic forms for use by ORTTA, investigators and departments, including, for example, electronic forms and templates for BA23s, award notices, financial reports and routine correspondence (upgrading hardware and software at ORTTA is essential to this effort).
- Negotiate with agencies and sponsors for electronic transfer of funds and increase efforts with these organizations to develop electronic transmission of proposals and awards.
- Study the appropriate dollar threshold for ORTTA document review.
- Analyze delays in financial transactions and determine ways to reduce them.
- Create a position for director of research administration within ORTTA to coordinate and supervise proposal, award and financial reporting activities (Fred Bentley, former director of the Office of Sponsored Programs at Stanford University, started in this position on June 1; see *Research Review*, June 1994, page 3).
- Reorganize grant administration, financial reporting and word processing staff into teams according to fields of research and sources of funds in order to help administrators and accountants work together more smoothly.
- Conduct training on policies, procedures, responsibilities and accountability for all faculty and staff involved in sponsored projects.

The review team stressed that the cost of doing nothing would be continued high turnover of ORTTA staff, increased customer dissatisfaction with service levels, and loss of the University's competitive edge in research.

Actions

After reviewing the recommendations, Anne Petersen, vice president for research, and Tony Potami, associate vice president for research and technology transfer, have approved a plan to improve ORTTA efficiency and effectiveness. Several work groups are proceeding to take these actions:

- Streamline the document flow for proposal and award handling.
- Install computer hardware and software that will support required systems applications and interfaces.
- Develop more effective automated information exchange with sponsors, CUFS, and departments and colleges.
- Simplify identification and access to award information.
- Provide applications to support the integration of data required to more effectively report and administer awards.
- Identify delays experienced by ORTTA clients and work with them to address the problems.
- Address organizational issues as deemed appropriate.

ORTTA has outlined a very aggressive schedule for improvements, with a 9- to 12-month time frame for the completion of the detailed action plans. In addition, "early response" actions have been targeted for completion as quickly as possible.

Faculty and staff are invited to participate on some of the improvement teams to ensure that ORTTA addresses issues from all perspectives. ORTTA staff also will be consulting with faculty and staff to provide us with suggestions and comments for improving our services. We would be happy to meet with you. To request a meeting, contact John Pint: 624-8205; John-P@ortta.umn.edu; ORTTA, 1100 Washington Avenue South, Suite 201.

Audits Threaten the Art

"If we do not police ourselves, we will be threatened with auditing rules—of the sort now found frequently in the oversight of financial matters—and the paperwork and bureaucracy could remove much of the joy and creativity from doing science. Good science resembles art more than it resembles accounting. Failing to recognize this fact would threaten the success of the scientific enterprise by driving many of our most talented people into other careers." *Bruce Alberts, president, National Academy of Sciences, to an NAS forum on scientific conduct.*

Library

(Continued From Page 1)

specifically to libraries—the Center for Library Initiatives. The CLI will have a director and half-time assistant in CIC's headquarters in Champaign-Urbana. Clark plans to hire a director to start in September. The CIC universities have funded the CLI for three years, with continuation subject to review in the second year.

Put simply, the director of the CLI will be the staff person in support of CIC library collaboration. Along with helping connect catalogs and circulation at CIC libraries, the director's job covers collections development, microfilming of aging texts, traineeships and exchange programs for librarians, and R&D on hardware and software, including computerized "expert systems" for library searches.

The job also includes getting and managing grants, from the Department of Education and the National Endowment for the Humanities, for example, to pay for such work. "The library group in the CIC has been very successful at getting grants," says Shaughnessy. "The CLI director will continue that work."

At the top of the CLI's agenda is the merging of 13 libraries into the so-called "virtual electronic library," supported by a \$1.2 million dollar award from the U.S. Department of Education.

The virtual library will be made of software connections that allow the commands, screens and searching software of any individual CIC library catalog to search the other CIC libraries too. The CIC plans for the connections to be almost invisible to the user, or "seamless." Along with making searches and interlibrary loans simpler and faster, the software will have to "balance" loads by directing requests away from a library that is getting more than its share of them. The end result will be similar to Lumina-to-U, the service that uses campus mail to deliver material from University of Minnesota libraries—except it will operate cross-country.

The virtual library does not, however, mean a simple linear increase in the number of resources available. It will allow the combined collection to grow faster and deeper. Shaughnessy and his counterparts at other universities plan to "rationalize" their collection development, to "distribute responsibilities" for amassing deep research collections in specialized fields.

"All 13 libraries don't need to develop comprehensive, research-level collections in the same fields," says Shaughnessy. "If we could agree to distribute collection responsibilities, so that Minnesota would be responsible for a certain group of disciplines and Wisconsin for another, it would be a wonderful accomplishment."

Dividing specialties among libraries will be difficult, even "dangerous," Shaughnessy acknowledges. "Ideally the uni-

Libraries Connected by the Committee on Institutional Cooperation

Indiana University	Michigan State University
Northwestern University	Ohio State University
Pennsylvania State University	Purdue University
University of Illinois Urbana-Champaign	University of Chicago
University of Illinois at Chicago	University of Iowa
University of Michigan	University of Minnesota
University of Wisconsin	

versities should be deciding who's going to specialize in what, and libraries should follow. As it turns out, the libraries are a little bit ahead of the universities," he says. "It's a little bit of a dangerous game if we get too far in front." Clark predicts that collections will start to show the full effect of the virtual library by the year 2000.

The CLI also hopes to avoid duplication in the acquisition of electronic files, like the on-line and CD-ROM indexes that have made searching journals so much easier. Libraries typically license such files from vendors, and pay fees based on how much the files will be used. "That means the University of Minnesota's fees are high, because we have such a large population," says Shaughnessy. "If we could mount the file in one place, where all 13 universities have access to it, maybe we could get a volume discount."

The chief obstacle to such arrangements is disagreement about copyright law. Along with making it more difficult for photocopying stores to distribute course packets, publishers have been working to restrict interlibrary loan practices. "Our position," says Clark, "is that interlibrary loan is protected by the fair use doctrine. That was once well-established in practice and in law. But it has since eroded. The Association of American Publishers has in effect thrown down the gauntlet. I don't know if they're inviting us to the negotiating table or to court."

Databases and on-line texts are one of the strengths of the Minnesota libraries. "Few libraries provide access to as many databases as we do," says Shaughnessy. Minnesota could also share with the rest of the CIC its on-line texts from 1,200 print journals published over the last four years.

The strength of the CIC libraries as a whole shows in statistics from the Association of Research Libraries. In 1991-92, the CIC libraries were just 12 percent of the academic libraries in the ARL, but they held 17 percent of the volumes in those libraries, added 16 percent of the new volumes, and had 18 percent of the serial subscriptions.

The CIC libraries also provided 26 percent of the interlibrary loans among ARL universities. They are good collaborators, and, in Clark's words, "highly influential models for the national community of research libraries."

By Phil Norcross

Graduate School News

Interdisciplinary Research Grants Awarded

The Office of the Vice President for Research and Dean of the Graduate School is pleased to announce that six proposals submitted for the initial Interdisciplinary Research and Postbaccalaureate Education competition will be awarded grants beginning July 1, 1994.

Proposals were requested by Vice President Anne Petersen in response to the University's reallocation of funds to high-priority areas that included the support of new interdisciplinary research ventures. The February 9, 1994, request for proposals specified that participating faculty should be from two or more disciplines that span two or more colleges. A faculty advisory committee appointed by Vice President Petersen evaluated the proposals on the basis of how well each identified significant faculty strengths, focusing on issues of state or national significance, or on areas 1) in which the University could create a special niche, 2) that hold important opportunities for the education and training of graduate students and 3) that are likely to draw external funding within two years. Proposals in other fields without significant external funding opportunities were also considered, provided a strong rationale was given for the importance of a problem and unique or outstanding faculty strengths to address it were identified.

Grants for up to two years each will be awarded for the implementation of new programmatic center activities (\$50,000 annually) or for activities that require a planning period (\$10,000 annually). Six of the 22 proposals submitted by the first deadline have been selected for funding. The grants will support interdisciplinary projects in eleven colleges. A second round of 19 proposals is currently under review. Another call for proposals during the 1995 winter quarter is anticipated.

Center for Metals in Biocatalysis

Lawrence Que, Jr., and John D. Lipscomb, principal investigators
\$50,000 annually/2 years

Metalloproteins and metalloenzymes are essential to life, for bacteria and all higher organisms, including humans. They serve diverse functions ranging from transport to catalysis. Some well-known examples include hemoglobin (O₂ transport), cytochrome oxidase (cellular energy supply), ribonucleotide reductase (synthesis of the components of DNA), cytochrome P450 (synthesis of steroid hormones and degradation of xenobiotics in mammals) and the plant photoreaction center (photosynthesis).

Currently there is great interest in understanding how metals function in biological systems. The results of such studies can be of fundamental importance, because metalloproteins

and enzymes play so many essential roles in human health, agriculture and the removal of toxins from the environment. Moreover, the development of industrial applications of metalloenzymes and synthetic analogs based on the structures of the metal centers found in these enzymes has great economic potential.

Specific metals are bound by many different types of enzymes and participate directly in catalysis. We propose to form a center based on an existing informal structure, with the goal of fostering collaborations between groups of established investigators in the Institute of Technology, Medical School and College of Biological Sciences. These groups currently study the biological, physical, chemical and kinetic properties of metalloenzymes and biomimetic chemical analog.

The establishment of such a center would serve to stimulate research in metallobiochemistry, promote the interdisciplinary interactions and collaborative arrangements among the metallobiochemistry community at the University of Minnesota, coordinate efforts to seek federal support for center activities and increase the national and international visibility of Minnesota as a locus of research in metallobiochemistry.

Center for Girls and Women in Sport

Mary Jo Kane, principal investigator
\$50,000 annually/2 years

As we become increasingly aware of the impact of sport and physical activity on the lives of females, we must begin to build a scientifically rigorous field of investigation that contributes to knowledge in all aspects of females' involvement, ranging from exercise and health enhancement to social and psychological concerns. The establishment of a Center for Girls and Women in Sport (sport is used here in the broadest context and is meant to include all forms of physical activity ranging from organized, competitive athletics to recreational activities) would be an innovative step, keeping the University at the forefront of research in this area, because there is no such center anywhere in the world. The Center would have as its primary focus an issue of great national significance—the impact of sport on girls and women. Since the passage in 1972 of Title IX (federal legislation designed to prohibit sex discrimination in educational settings), participation rates for females have skyrocketed. Although a great deal of research has been conducted on how sport involvement impacts males, we cannot automatically extrapolate these empirical findings to females. Thus, in spite of the significant associations discovered between sport participation

Graduate School News

and physical, social and psychological development for males, a clear understanding of these connections for females is still in its infancy. Establishment of this center reflects the collaboration of faculty in the Colleges of Education, Agriculture and Liberal Arts and the Medical School.

The mission of the Center is three-fold:

- To conduct, sponsor and promote basic and applied research on significant issues related to females' involvement in sport and physical activity;
- To support and enhance the education, training and mentorship of graduate students;
- To engage in outreach and public service by disseminating research findings and educational materials to targeted constituencies.

Food-Animal Biotechnology Center

Merging Molecular Biology with Animal Production Systems

Lawrence Schook, principal investigator
\$50,000 annually/2 years

The College of Veterinary Medicine and its allied Department of Animal Science in the College of Agriculture, in collaboration with scientists in the College of Biological Sciences, College of Natural Resources and the Institute of Human Genetics, seek to create the Food Animal Biotechnology Center (FABCenter). The FABCenter will permit the development of new molecular technologies associated with animal production through the identification and modulation of genes affecting growth, development, reproductive performance, efficiency of feed conversion, lactation and disease resistance. FABCenter will provide a unique, integrated research and training approach for implementing new techniques that can be utilized by currently existing outreach-oriented programs (e.g., the Center for Avian Health, the Swine Center, the Dairy Initiatives and the Aquaculture Program).

The mission of the FABCenter is to develop competitive, highly integrated food production systems that provide safe, economical food products through the utilization of molecular tools and methods. Our goal is to become the source of new technologies, information and experts for molecular biology in animal production systems. This center will be the source where stakeholders can seek answers to their needs and become partners in future efforts. To obtain this goal, we have identified several target areas that reflect the expressed needs of our stakeholders as well as our research strengths. These target areas include the following:

- Enhancement of animal health and disease resistance;

- Modulation of animal growth and reproduction;
- Gene mapping for genetic diversity and biological performance.

Center for Research on Interpersonal Relationships

W. Andrew Collins, principal investigator
\$50,000 annually/two years

The Center for Research on Interpersonal Relationships is an interdisciplinary effort to foster research on the nature and course of human relationships and their impact on individuals across the life span. The Center's aim is to enhance the distinctive strengths of the University of Minnesota for cutting-edge research and graduate training on interpersonal relationships; to facilitate scholarly exchange and discussions of collaborative relations with University faculty and graduate students interested in research on close interpersonal relationships; and to plan for formal programs and external-funding applications for training and research programs.

Currently, the Center is pursuing a two-pronged strategy designed to extend existing strengths in research. First, Center members hope to build on current studies by adding components that address relationship constructs and processes in greater detail. Second, new experimental and other laboratory-based studies are being designed to address specific issues relevant to the data being generated in the existing studies. Faculty members will meet regularly for planning and collaboration and for coordinating teams facilitated by Center staff. In addition, the Center will help to establish and maintain a core of activities centering around measurement strategies and techniques relevant to research on dyadic relationships.

Faculty from ten departments represent the Colleges of Biological Sciences, Education, Human Ecology and Liberal Arts; the School of Nursing; and the Carlson School of Management. A coordinating committee of Center faculty members and representatives of college deans will guide the Center's operations.

Plant Community Genetics

Ruth Shaw, principal investigator
\$10,000 annually/2 years

Recent advances in molecular, quantitative and population genetics have set the stage for a broadly synthetic approach to plant evolution, dubbed "community genetics." Faculty in our group are investigating the genetic basis of plants' interactions with their associated insects, microbes or other plants. We have identified important biotic interactions in workable experimental systems. We now seek to identify and measure the evolutionary and population dynamic proc-

Graduate School News

esses as they influence the evolution of interactions between species. Our studies will move beyond descriptions of evolutionary history with dynamic models that predict evolutionary outcomes of plants' interactions with their biotic environment. Seven core faculty represent five departments from three colleges (Plant Biology and Ecology, Evolution and Behavior from the College of Biological Sciences; Entomology and Plant Pathology from the College of Agriculture; and Forest Resources from the College of Natural Resources).

The ultimate objective of our proposal is to prepare for the submission of a successful NSF Research Training Grant. Toward this end, we will use the interdisciplinary funding for three purposes:

- Establishment of a journal club in community genetics. The series will bring together students and faculty interested in this field and bring in outside speakers, co-sponsored by ongoing program seminars.
- Development of a graduate student training program. We will begin with a collaborative seminar course that will consider a) the design of field experiments, b) the use of molecular genetic techniques in population genetic analyses, c) computerized data management and d) quantitative genetic analyses.
- Initiation of a graduate student recruitment program. Strong candidates will be invited to meet with faculty individually, and collectively, where we hope our *esprit de corps* will help draw the strongest possible graduate students to the University of Minnesota.

Interdisciplinary Program for Research and Graduate Training in Microbial Physiology

Palmer Rogers, principal investigator
\$10,000/1 year

The microbial world includes the bacteria, the protozoa, the slime molds, the fungi and the algae. Though most of these organisms are quite small, their interactions and activities are vital to practically every aspect of the workings of the natural world. Research on the physiology of microbes is directed toward understanding the intimate molecular mechanisms of their nutrition, metabolism, adaptation, exchange of molecular signals and genetic material, survival mechanisms and the production of both useful and toxic products. The remarkable diversity in life-styles and physiology exhibited by the many species of microbes expands our basic knowledge of life in extreme environments and life supported by unusual food and energy sources. In addition, this knowledge of the diversity of microbial physiology has become central to many important applied areas impacting on human needs.

This is a planning proposal to initiate a program in 1994-95 to strengthen research interactions in microbial physiology and develop doctoral and post-doctoral research and training in microbial physiology at the University of Minnesota. Because we recognized the centrality of microbial physiology in our own research and graduate training efforts, about 18 months ago we formed a Microbial Physiology Study Group. Because we are located on two campuses, in five departments of three colleges (the Medical School and the Colleges of Biological Sciences and Agriculture), we identified a need to form a "cluster" in order to draw our research efforts and graduate students together with the purpose of exchanging ideas. We will examine the possibility of a future University-wide center to be developed with funding from local and federal sources.

University Animal Care Committee

Points to Keep in Mind

Sue Bonafield, Secretary to the University Animal Care Committee, lists the following points to keep in mind while preparing an Animal Usage Form (BA22):

- Item 7 Pay close attention to item 7, the list of certified personnel. If Animal Care does not have statements either on file or included for any individuals, the BA22 *will not* be reviewed. Call Sue Bonafield at UACC if you have doubts about an individual's certification.
- Item 9 The Environmental Health and Safety Department is now taking a more active role in the review of BA22s to meet federal mandates. If you choose 4, 5 or 6 under item 9 on the BA22, complete 17 and then contact Environmental Health and Safety at 6-6002 to see what is needed. These BA22s must have EHS clearance before being approved by UACC.
- Item 13a, b USDA and the Animal Welfare Act require that you describe *search strategies* used to look for alternative methods, e.g., *Index Medicus* search, journal searches, consultation with the National Agricultural Library's Animal Welfare Information Center, consultation with peers working in the field.
- Item 14a Death as the endpoint means the animal is allowed to die, spontaneously, in its cage, without intervention.

When you next send a BA22 to the Animal Care Committee at the new address (Box 811 Mayo), *include a strip of six self-addressed gummed labels.*

Allow one month for the BA22 to be processed. Most BA22s should clear in this amount of time, but allow more time if yours might require it.

If an original BA22 has reached its expiration date, a new BA22 is required to *house animals or continue work*. A new protocol number will be assigned and should replace the old number on the cage cards. This is a standing policy of the Committee which is now being specifically addressed.

All animal-use studies which propose *housing in a non-RAR area* need to provide justification for this housing and need to make arrangements with a veterinarian who will provide on-call care if a need should arise. This must be someone other than the principal or secondary investigator. Name this person on your BA22.

As of June 1994, *duration of approval* will begin with the approval date and run, in most cases, for three years.

Questions? Call Sue Bonafield, UACC secretary, 4-5663.

Electric Power Research Institute Biotechnology Center

Electric Power Research Institute (EPRI) wants to establish a technology transfer center to work "in the areas of biomass, bioremediation, and bioconversion of fuels and wastes."

This "biotechnology center" will manage early-phase to mid-phase technology transfer, will be jointly funded by EPRI and a local "host" power company for about \$1 million, and will probably include university-industry collaboration. EPRI will publish its request for proposals in July and plans to select a site for the center by the end of 1994.

A University response to this opportunity is being explored by the University's Center for Alternative Plant and Animal Products (CAPAP), in cooperation with Northern States Power.

Chris Hanson, administrator of CAPAP, welcomes ideas on this matter from the University community: "Your perspective on this opportunity and its potential ties to Minnesota industry, the University and other public institutions will help determine if we should proceed."

Call Hanson at 624-4217 or Hanso053@maroon.tc.umn.edu.

Lunch-Hour Seminars on Use of Lab Animals

Euthanasia of Laboratory Animals

by Craig Atkinson

Wednesday, July 20, noon to 1:00

Rodent Health Observation

by Cynthia Gillett and Brenda Koniar

Wednesday, August 24, noon to 1:00

Orientation to the Use of Animals at the University of Minnesota

by Cynthia Gillett

Wednesday, September 14, noon to 1:00

All seminars take place on the East Bank, Millard Hall, room 5-276.

Commerce and Defense Hindering Technology Transfer, Says Bayh

The U.S. Departments of Commerce and Defense are working against technology transfer by denying intellectual property rights to universities, former U.S. Senator Birch Bayh told a Senate hearing in April.

The Advanced Technology Program in Commerce and the Advanced Research Projects Agency in Defense both fund joint university-industry R&D projects. Bayh said that both programs hinder technology transfer by allowing only for-profit organizations to own the resulting intellectual property.

Earlier in April, the Senate passed a bill that requires Commerce to change the ATP policy and to allow universities title to intellectual property. The National Competitiveness Act (S.4) specifies that any participant in a joint venture under the ATP program would be able to own a patent on the results, provided that arrangement was agreed to by the other parties in the venture. The Senate bill was incorporated into the House companion bill, H.R. 820, which is expected to reach a conference committee soon.

Bayh and Robert Dole wrote the Bayh-Dole Act of 1980, which gave universities the rights to patents and other intellectual property resulting from their federally funded research. (See *Research Review*, March 1994, p. 7.) Bayh testified to an April hearing of the Senate Subcommittee on Patents, Copyrights and Trademarks.

"I am concerned," said Bayh, "that the officials administering the Advanced Technology Program at the Department of Commerce have taken the position that the Bayh-Dole Act does not apply to that program. . . . I also understand that a similar position is being taken by the Advanced Research Projects Agency at the Department of Defense."

Bayh defended the wisdom of granting intellectual property to universities. Prior to 1980, he explained, the government retained title to intellectual property resulting from research it funded, and it granted only nonexclusive licenses to industry. As a result, there was little incentive to commercialize federally funded R&D. The new distribution of intellectual property required by the Bayh-Dole act, said Bayh, has led to \$9 billion to \$13 billion in product sales; 50,000 to 100,000 new jobs; and more than \$2 billion in tax revenues.

Bayh also expressed concern about executive and legislative proposals to put price controls on cooperative research and development agreements (CRADAs). At NIH, which is working to control the prices of pharmaceuticals it helps develop, the number of CRADAs has dropped from 126 in 1992 to 26 in 1993.

From *Washington Fax*, 28 April 1994, and *The Chronicle of Higher Education*, 6 April 1994, p. A45.

1993 Success Rates, NIH Proposals

NCI	24.6 %
NHBLI	21.9 %
NIDR	24.3 %
NIDDK	22.0 %
NINDS	25.1 %
NIAID	29.3 %
NIGMS	29.8 %
NICHD	21.3 %
NEI	32.0 %
NIEHS	21.1 %
NIA	23.1 %
NIAMS	20.9 %
NIDCD	29.2 %
NIMH	19.5 %
NIDA	31.8 %
NIAAA	19.2 %
NCRR	28.4 %
NINR	11.3 %
NCHGR	27.9 %
Average	24.4 %

New and competing renewal applications, including ROIs, POIs, FIRST (R29), MERIT (R37), SBIR (R43, R44). Not including centers. From *Washington Fax*.

Success Rates, NIH Proposals

1984	32.1 %
1985	33.2 %
1986	31.7 %
1987	34.8 %
1988	31.4 %
1989	28.0 %
1990	24.6 %
1991	29.1 %
1992	29.6 %
1993	24.5 %
'84-'93 average	29.9 %
1994 projection	24.8 %

New and competing renewal applications, including ROIs, POIs, FIRST (R29), MERIT (R37), SBIR (R43, R44). Not including centers. From *Washington Fax*.

National Science Foundation

Biotic Surveys and Inventories

Understanding current and past biological diversity is essential for long-term studies in environmental biology; provides the foundation for research in systematic and population biology, ecological studies, conservation and restoration biology, anthropology, physical geography, biological oceanography and paleobiology; and is necessary for monitoring and assessing land-use patterns, global climate change and economics of natural resources.

In addition, humanity is dependent on access to a diverse array of products that are obtained from wild species; on improvement of domesticated species, which is contingent upon the maintenance of genetic diversity among their wild relatives; on management of diverse populations of parasites and pathogens of human populations and domesticated species; and on the stability of natural ecosystems, which require adequate levels of biodiversity.

However, increasing rates of extinction of species and the loss of knowledge of local species among indigenous peoples have contributed to an urgent need for research in species-level biodiversity across all kingdoms.

In response to this crisis, the NSF Division of Environmental Biology has established the Biotic Surveys and Inventories Program (BS&I). BS&I invites proposals to document levels of diversity among living and fossil species throughout the world, to include viruses, prokaryotes and eukaryotes from all marine and terrestrial habitats.

The program supports research to record and document the diversity of life in earth, both past and present, as a prologue to investigations of patterns and processes and the development of plans for conservation of that diversity.

Proposals submitted to the Biotic Surveys and Inventories Program should involve collecting specimens of extant and extinct organisms as samples of taxa of geographic or oceanographic regions and/or geologic horizons; conducting inventories of existing collections; developing and disseminating electronic databases of the collected or inventoried specimens and taxa, and producing biotic treatments, authenticated species lists, catalogs, manuals, keys, expert identification systems, and/or documents in electronic and printed form.

BS&I anticipates that between fifteen and thirty-five awards will be made per fiscal year. Awards may be for up to five years, but most grants will be for three years, with option to renew. Funding levels will tend to range from \$30,000 to \$150,000, with most at approximately \$70,000 per year.

Annual deadlines are the **second Monday in May** or the **second Monday in November**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Biotic Surveys and Inventories Program, Division of Environmental Biology, NSF, 4201 Wilson Boulevard, Room 640, Arlington, VA 22230; 703/306-1483; fax 703/306-0367; internet jmoorefi@nsf.gov or jestes@nsf.gov.

NICHD

Unintended Pregnancy in the United States

RFA: HD-94-022

The Center for Population Research of the National Institute of Child Health and Human Development (NICHD) invites scientists to submit grant applications for the support of research on the definition of, the measurement of, and the determinants of intended vs. unintended pregnancies and births in the contemporary U.S.

Two sets of research questions are at issue and applications may address aspects of either or both. First, the research should provide a richer understanding of the meaning of unintended pregnancy, as conventionally defined, as well as build a scientific base for improved measures that may be used in demographic surveys. Second, the research should improve and extend research on the determinants of unintended pregnancy and birth at the cultural, societal, couple and individual levels. Sociological, psychological, social-structural and contextual approaches are welcomed. Qualitative as well as quantitative methodologies would be appropriate.

Applications in response to this RFA will be funded through individual research project grants (R01) and FIRST (R29) awards. For four to six awards, \$1 million in direct costs has been set aside.

The application deadline is **August 19, 1994**. A complete copy of the announcement, as described in the May 13, 1994, *NIH Guide*, is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Susan F. Newcomer, Ph.D., Demographic and Behavioral Science Branch, NICHD, Building 61E, Room 8B13, Bethesda, MD 20892; 301/496-1174, fax 301/496-0962, e-mail Newcomes@hd01.nichd.nih.gov.

U.S. Information Agency

Professional Development in English Language Teaching

The Office of Citizen Exchanges, United States Information Agency (USIA) Bureau of Educational and Cultural Affairs, announces a competitive grant program for non-profit organizations to conduct a project for enhancing professional development in English language teaching at the secondary level in Israel (both Arab and Jewish communities), Gaza and the West Bank. Participants will be professionals responsible for developing effective English language teaching programs. Emphasis will be on curriculum development, teaching methodology, production of classroom-appropriate material and organizing professional associations and networks. The program will be conducted in English.

A second, underlying, agenda of this project is to convene, on an egalitarian basis and on neutral territory, a group of Israeli Jews, Israeli Arabs and Palestinians who will work together within a professional discipline—in this case, English language teaching—and who will, upon returning to their own communities, maintain professional, mutually supportive contact and represent, within those communities, the feasibility of collegial relationships between Jews, Israeli Arabs and Palestinians.

American organizations are invited to submit proposals for a project to bring 12 English teaching professionals to the United States for a period of four or five weeks. The second phase of the project should take place over a period of approximately six months and should entail the travel, at approximately eight- to ten-week intervals, of four American specialists/consultants. Each will conduct a series of two- to three-day workshops on one or more of the key issues addressed in the initial phase of the exchange (e.g., curriculum development, teaching methodology, in-service training) in each of the locations in Israel, Gaza and the West Bank from which participants in the original phase were drawn.

The amount requested from USIA for this program should not exceed \$135,000. Per diem support from host institutions during an internship component is strongly encouraged.

Interested applicants are urged to read the complete announcement in the *Federal Register* (No. 115, June 16, 1994) before making inquiries to the or submitting proposals. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

The application deadline is **August 2, 1994**. For further information contact the Office of Citizen Exchanges (E/P), Room 224, USIA, 301 Fourth Street SW, Washington, DC 20547; 202/619-5319, fax 202/619-4350.

Russell Sage Foundation

The Russell Sage Foundation is the principal American foundation devoted exclusively to research in the social sciences. It is a research center, a funding source for studies by scholars at other academic and research institutions, and an active member of the nation's social science community.

The foundation currently pursues four principal programs:

1. a program in the social analysis of poverty that supports research on social, economic and institutional means of escape from persistent poverty;
2. a program of research on immigration that focuses on the economic and social experiences of the offspring of recent immigrants, as well as the impact of immigration on native-born disadvantaged groups;
3. a program of research on literacy, run jointly with the Andrew W. Mellon Foundation, that seeks to apply insights from cognitive science to the design of improved methods for fostering active literacy; and
4. a program on the social psychology of cultural contact that focuses on designing means of improving relations between racial and ethnic groups in school, workplace and neighborhood settings.

In addition to these programs, a special project to provide a definitive analysis of the 1990 census is currently underway in collaboration with the Social Science Research Council.

At its headquarters in New York City the foundation has also established a center where visiting scholars can pursue their writing and research. Particularly welcome are groups of scholars who wish to collaborate on a specific project during residence. Visiting scholars typically work on projects related to the foundation's current programs, although scholars whose research falls outside the foundation's active programs also participate. Applications for visiting scholar positions are requested by **November 15**, annually.

Grants currently average about \$50,000, with a range running roughly from \$10,000 to \$200,000. A limited number of small grants (\$25,000) are made each year. Overhead is allowed up to 15% on grants above \$25,000; no overhead is allowed on grants below \$25,000.

There is no application deadline for the foundation's principal programs. Proposals should be preceded by a brief letter of inquiry. Letters should summarize the project's objectives, the work plan, the qualifications of persons engaged in the research, and an estimated budget. For further information contact Eric Wanner, Russell Sage Foundation, 112 East 64th Street, New York, NY 10021.

U.S. Department of Agriculture Alternative Agricultural Research and Commercialization Center

The Alternative Agricultural Research and Commercialization (AARC) Center, U.S. Department of Agriculture, is requesting proposals to use agricultural materials (traditional and new crops, animal byproducts or forestry) in industrial products or processes. Under the program, the AARC Center will award competitive cooperative agreements to support primarily pre-commercial tasks but also targeted research and development of new industrial products or processes derived from agricultural or forestry materials. All other things equal, the nearer to commercialization a product or process is the higher the likelihood of funding by the AARC Center.

The AARC Center will accept either pre-proposals or full proposals from any private firm, individual, public or private education or research institution or organization, federal agency, cooperative, or nonprofit organization. Cooperative projects involving combinations of the above organizations, especially with private sector leadership, are encouraged.

To be eligible for this round of awards, pre-proposals or full proposals must be received by **August 31, 1994**, each on forms provided by the AARC Center. Write to USDA AARC Center, Ag Box 0400, 14th and Independence Avenue SW, Cotton Annex, 2nd Floor Mez, Washington, DC 20205-0400; call Patricia Dunn at 202/401-4860 or fax 202/401-6068. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

National Endowment for the Arts Growth and Diversity in Folk and Traditional Arts

The National Endowment for the Arts is requesting proposals leading to the award of a cooperative agreement for a study of the growth and diversity in folk and traditional arts in the U.S. and its territories.

The project will result in a report, or series of reports, that will advance public knowledge and understanding of the complexity of the folk and traditional arts in America, including an examination of its art forms, artists, audiences, and arts organizations; the growth in the quantity of this activity in the last 15 years; and an overview of how this activity is supported through public arts agencies and through folk and traditional arts organizations themselves.

It is anticipated that the project will entail ten case studies; identification, compilation and analysis of secondary data on cultural and ethnic diversity; and interviews with folk and traditional arts organizations.

{Next Column}

Those interested in receiving the solicitation package should reference program solicitation PS 94-10 in their written request and include two (2) self-addressed labels. Telephone requests will not be honored.

The application deadline is **August 15, 1994**. For further information contact William I. Hummel, Contracts Division, National Endowment for the Arts, 1100 Pennsylvania Avenue NW, Washington, DC 20560; 202/682-5482.

Department of Defense Women's Health Initiative

The Department of Defense will soon request applications to fund research on a range of women's health issues.

Research should be planned to benefit the health and performance of women in the service in broadly defined areas. Specific topics include psychological stress associated with military deployment, training, traumatic incidents and other military life conditions, special health care needs of deployed women, and toxicology and teratology of military material and side-effects of pharmaceuticals and biologicals where there is evidence of gender differences.

DoD is also interested in preventing musculoskeletal injuries disproportionately found in women, including stress fractures and other physical training injuries; ways to improve upper-body strength or overcome limitations, including physical training programs and individual and group duty performance; and nutrition, including strategies for improving mineral status of service women, prevalence of eating disorders and metabolic studies.

Other topics are pregnancy and postpartum issues for military women, including the timing of pregnancy, health of newborns and postpartum return to duty fitness; gender comparisons of psychological or physiological response to operational stressors, including intense physical activity, environmental extremes, food restrictions and sleep deprivation; and health factors associated with equipment and special clothing, including aviation clothing and equipment design.

Department of Defense officials are urging collaborations with DoD medical research organizations. \$10 million is the planned amount to be awarded overall.

The official announcement was not available at the time of this writing, but was scheduled to be released in late June. The application deadline is anticipated to be **August 31**. To receive the announcement, contact Dan Shackelford, U.S. Army Medical Research, Development, Acquisition and Logistics Command, Attn: SGRD-ACQ-BA (DWHRP) Fort Detrick, Frederick, MD 21702-5012; 301/619-7216.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
May 1994	347	71,308,183
Awards Processed		
May 1994	206	18,609,947
Proposals Submitted		
July 1993 - May 1994	3,867	611,360,611
Awards Processed		
July 1993 - May 1994	2,604	237,469,013
Proposals Submitted		
July 1992 - May 1993	3,627	548,909,628
Awards Processed		
July 1992 - May 1993	2,796	237,152,551

Assessment of Workers' Exposures to Lead-containing Aerosol

James H. Vincent, Environmental and Occupational Health
International Lead Zinc Research Organization
\$45,000 - 04/01/94-03/31/95

All-Biology Reference Laboratory Investigation

Fatih Uckun, Therapeutic Radiology
National Childhood Cancer Foundation
\$166,402 - 12/01/93-11/30/94

Intrathecal Therapy of Central Nervous System (CNS) Leukemia with B43-PAP (Pokeweed Antiviral Protein) Immunotoxin

Fatih Uckun, Therapeutic Radiology
Parker Hughes Trust
\$125,000 - 06/01/94-05/31/95

Luteinizing Hormone Pulse Characteristics in Depression

William H. Meller, Psychiatry
NIH, NIMH
\$70,000 - 05/01/94-04/30/95

How Do Alcoholics Anonymous Sponsors Help Newcomers

Mark L. Willenbring, Psychiatry
NIH, NIAAA
\$59,194 - 05/01/94-04/30/95

Nociception, Excitatory Amino Acids and Drugs of Abuse

George Wilcox, Pharmacology
NIH, NIDA
\$165,836 - 01/01/94-12/31/94

A Multicenter, Double-blind, 40-month Placebo-controlled, 1-Year Active-controlled Study Comparing the Safety and Efficacy of Once-daily C1-981 with that of Lovastatin in Patients with Elevated LDL Cholesterol

Donald B. Hunninghake, Pharmacology
Jennifer Robinson, Medicine
Parke-Davis Pharmaceutical Research Division
\$108,800 - 10/20/93-06/30/95

Possible Genotoxic Interactions of 2,4-D

Vincent F. Garry, Laboratory Medicine and Pathology
U.S. Department Of Agriculture
\$83,000 - 01/01/94-12/31/95

Hitchings-Elion Fellowship Support for Dr. Aaron W. Crawford

Christopher C. Wylie, Institute of Human Genetics
Aaron W. Crawford, Institute of Human Genetics
Burroughs Wellcome Fund
\$67,767 - 03/01/94-03/10/96

Research Core: Ataxia Clinic

Christopher Gomez, Neurology
Minnesota Medical Foundation
\$25,962 - 04/01/94-03/31/95

Neural Modeling of Motor Cortex and Spinal Cord

Apostolos P. Georgopoulos, Physiology
Alexander Lukashin, Physiology
USDOD, ONR
\$133,221 - 10/01/93-09/30/94

Mechanism of Anticancer Action of Lupulones

Louise M. Nutter, Pharmacology
Kalsec Incorporated
\$35,000 - 03/06/94-03/05/95

Large-scale DNA Sequence Analysis

Stewart Scherer, Microbiology
University of California, Berkeley
\$98,000 - 10/15/93-09/30/94

Pathogenesis of HIV-induced Immunodeficiency

Ashley T. Haase, Microbiology
NIH, NIAID
\$215,460 - 03/01/94-02/28/95

Access and Preservation for Dance Research Resources

Alan Lathrop, University Libraries
Barbara Bezat, University Libraries
National Endowment for the Humanities
\$27,158 - 01/01/94-12/31/94

Micromagnetic Microscopy Center

E. Dan Dahlberg, Physics and Astronomy
USDOD, ONR
\$79,939 - 11/01/93-10/31/94

Theoretical and Experimental High-energy Physics

Kenneth J. Heller, Physics and Astronomy
Earl Peterson, Physics and Astronomy
Thomas F. Walsh, Physics and Astronomy
U.S. Department of Energy
\$1,405,000 - 01/01/94-10/31/94

Multiaxial Lite Prediction Development

Jeffrey H. Vogel, Mechanical Engineering
John Deere Product Engineering Center
\$29,971 - 11/01/93-10/31/94

Optimizing the Turbo-rotor-compound Engine

John Abraham, Mechanical Engineering
Los Alamos National Laboratory
\$69,265 - 11/01/93-04/30/94

Emerging Application of Probability

Avner Friedman, Institute for Mathematics and its Applications
Willard J. Miller, Mathematics
USDOD, ONR
\$40,000 - 01/01/94-07/31/94

Models For C and O Isotope Trends of Holocene Carbonate Lacustrine Sequences from the Northern Great Plains

Kerry Kelts, Geology and Geophysics
American Chemical Society, Petroleum Research Fund
\$49,980 - 01/01/94-08/31/96

Intelligent Integrated Target Sensing and Recognition

Ahmed H. Tewfik, Electrical Engineering
USDOD, DARPA
\$87,799 - 07/15/93-03/30/94

Syntheses and Chemistry of Anionic Bis(arene)metal Complexes

John E. Ellis, Chemistry
American Chemical Society, Petroleum Research Fund
\$50,000 - 05/01/94-08/31/96

Class II Aminoacyl-tRNA Synthetase Substrate Recognition

Karin Musier-Forsyth, Chemistry
NIH, NIGMS
\$127,860 - 05/01/94-04/30/95

Aeroacoustics of Turbulent High-speed Jets

Thomas S. Lundgren, Aerospace Engineering and Mechanics
National Aeronautics and Space Administration
\$23,546 - 01/01/94-12/31/94

Maternal and Child Health Special Project

Amos S. Deinard, Community University Health Care
City of Minneapolis
\$293,908 - 01/01/94-12/31/94

Benchmarking Tool for State and Local Economic Development Strategies

Lee Munnich, Humphrey Institute
U.S. Department of Commerce
\$96,097 - 11/01/93-10/31/94

Glycosyl Transferase from *Streptococcus sanguis*

Pamela R. Erickson, Preventive Sciences
Mark C. Herzberg, Preventive Sciences
NIH, NIDR
\$34,971 - 05/10/94-04/30/95

Population and Development Inquiry

Dennis A. Ahlburg, Carlson School of Management
Allen Kelley, Economics
Karen O. Mason, Sociology
Commonwealth of Australia
\$184,135 - 01/01/94-09/15/94

Composted AGM in the Soil-plant Environment

Paul R. Bloom, Soil Science
Bruce Cook, Soil Science
Procter and Gamble Company
\$81,546 - 03/01/94-06/30/95

More Precision in Fertilizer Management

Pierre Robert, Soil Science
George W. Rehm, Soil Science
Gary L. Malzer, Soil Science
Minnesota Corn and Research Promotion Council
\$60,000 - 11/30/93-12/31/95

Modeling Efficient White Mold Control

Richard A. Meronuck, Plant Pathology
Linda L. Kinkel, Plant Pathology
Jerry A. Wright, West-Central Ag Experiment Station, Morris
Agricultural Utilization Research Institute
\$30,000 - 03/01/94-03/01/96

Promoters for Disease Resistance Genes in Small Grains

William R. Bushnell, Plant Pathology
Consortium for Plant Biotechnology Research Incorporated
\$90,163 - 02/01/94-06/30/95

Pesticides: Measuring the Environmental Impact

Emily E. Hoover, Horticultural Science
Agricultural Utilization Research Institute
\$22,200 - 03/01/94-02/28/96

Economic Development Through Biomass Systems Integration

Ervin Oelke, Agronomy and Plant Genetics
Northern States Power Company
\$150,000 - 12/01/93-05/31/94

Modernization and Replacement of Controlled Environment Growth

Gary M. Gardner, Horticultural Science
Irwin Rubenstein, Genetics and Cell Biology
National Science Foundation
\$740,506 - 03/01/94-02/28/96

The Caddisflies, *Trichoptera*, of Costa Rica

Ralph W. Holzenthal, Entomology
National Science Foundation
\$184,908 - 06/01/94-04/31/97

Pesticide Reduction Options Program

Edward B. Radcliffe, Entomology
David W. Ragsdale, Entomology
Agricultural Utilization Research Institute
\$39,901 - 04/01/94-03/31/95

Conservation Tillage Bioeconomic Model Development

Donald L. Wyse, Agronomy and Plant Genetics
Liz Stahl, Agronomy and Plant Genetics
Agricultural Utilization Research Institute
\$32,810 - 03/01/94-03/01/96

Annual Medics - Weed Smother Crops

Craig C. Sheaffer, Agronomy and Plant Genetics
Michael A. Schmitt, Soil Science
Gyles Randall, Southern Agricultural Experiment Station, Waseca
Agricultural Utilization Research Institute
\$38,270 - 03/01/94-02/28/96

Development and Utilization of an Oat Transformation System

David A. Somers, Agronomy and Plant Genetics
Quaker Oats Company
\$80,000 - 01/01/94-12/31/95

Determining Why the Lamprey Olfactory System is Extremely Sensitive to Bile Acids

Peter Sorensen, Fisheries and Wildlife
Daniel D. Gallaher, Food Science and Nutrition (Chemistry)
Great Lakes Fishery Commission
\$63,725 - 04/01/94-03/31/95

Automating Guidance and Response for Group Decision-making

Marshall S. Poole, Speech-Communication
Salvatore March, Information and Decision Sciences
Geraldine Desanctis, Information and Decision Sciences
National Science Foundation
\$110,557 - 03/01/94-09/30/95

Strategic Response to Decline Among Nonprofit Organizations

Joseph J. Galaskiewicz, Sociology
National Science Foundation
\$85,493 - 03/01/94-10/31/96

Higher Education Center Against Violence and Abuse

Jeffrey Edleson, School of Social Work
St of MN, Higher Education Coordinating Board
\$240,000 - 05/02/94-06/30/95

Minnesota Extension Comprehensive State Indoor Radon Program

Evelyn M. Franklin, Design, Housing and Apparel
Marilyn Bode, Design, Housing and Apparel
William J. Angell, Design, Housing and Apparel
St of MN, Department of Health
\$200,124 - 08/01/93-09/30/94

National Clearinghouse on Service Learning

Gary W. Leske, Vocational and Technical Education
James C. Kielsmeier, Center for Youth Development and Research
National Youth Leadership Council
\$315,000 - 05/01/93-04/30/94

Technology and Careers Academy

David J. Pucel, Vocational and Technical Education
Dakota County Technical Institute
\$40,000 - 12/01/93-09/30/94

Evaluation of Medicaid Community Supported Living Arrangements

Robert H. Bruininks, Educational Psychology
K. Charlie Lakin, Educational Psychology
Systemetrics
\$150,319 - 09/30/93-03/30/96

Citizenship Education for the 21st Century: A Policy Oriented Research Study

John J. Cogan, Curriculum and Instruction
Sasakawa Peace Foundation
\$150,000 - 04/01/94-03/31/95

Minnesota Direct Service Training Initiative

K. Charlie Lakin, Educational Psychology
Scott McConnell, Educational Psychology
David R. Johnson, Educational Psychology
St of MN, Department of Health
\$50,000 - 10/25/93-06/30/94

Biobehavioral and Hormonal Responses to Stress in Infants

Megan Gunnar, Institute of Child Development
NIH, NICHD
\$165,642 - 04/01/94-03/31/95

Genetics of Bacteria that Utilize One-carbon Compounds

Richard S. Hanson, Gray Freshwater Biological Institute
U.S. Department of Energy
\$84,000 - 03/01/94-02/28/95

Assembly of Basal Bodies and Flagella of *Chlamydomonas*

Paul A. Lefebvre, Genetics and Cell Biology
NIH, NIGMS
\$138,056 - 03/01/94-02/28/95

Software for Curricula in Ecology and Evolution

Donald N. Alstad, Ecology, Evolution and Behavior
National Science Foundation
\$126,490 - 02/15/94-07/31/96

Optimizing the Biodegradation of Atrazine and Related Compounds

Lawrence P. Wackett, Gray Freshwater Biological Institute
Michael J. Sadowsky, Soil Science
Ciba-Geigy Corporation
\$186,048 - 11/15/93-11/16/95

Evolution of the North American Arid Lands Avifauna

Robert M. Zink, Bell Museum of Natural History
National Science Foundation
\$190,000 - 02/01/94-10/31/97

Community Connectors Institute

C. Eugene Allen, Institute of Agriculture, Forestry, Home Economics
McKnight Foundation
\$330,000 - 03/01/94-03/31/95

Telecommunications Regional Planning and Coordination Grant For Metro Region

Donald Riley, Academic Affairs
St of MN, Higher Education Coordinating Board
\$100,000 - 03/05/94-06/30/94

Incubating Forest Products Technology

Roy D. Adams, Natural Resources Research Institute, Duluth
U.S. Department of Agriculture
\$260,209 - 03/15/94-03/31/98

Pollution Prevention Opportunity Assessments and Database Needs Assessment

Dianne Dorland, Science and Engineering, Duluth
St of MN, Pollution Control Agency
\$45,000 - 05/09/94-12/31/94

Completion of Archaeological Accessioning, Analyses, Hannaford

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
Susan Mulholland, Science and Engineering, Duluth
St of MN, Department of Transportation
\$79,590 - 04/19/94-10/30/94

NII

(Continued From Page 3)

The name *national* information infrastructure is "short-sighted," said Bearman, because it will quickly become the GII, or *global* information infrastructure.

To illustrate the threat the NII poses to individual privacy, Bearman described a pilot project in which private households captured television broadcasts off of satellites, while hardware at the televisions recorded, for billing purposes, what those households watched.

The Clinton administration has stressed the importance of connecting to the NII every school, library and hospital in the country. Yet, Bearman observed, the 32-member advisory council includes only one librarian, one teacher and no one from health care. "I have no idea why they chose who they did," said Bearman. "I have no idea why I got on it."

Universal access is hard to define, said Bearman. From the audience, University government documents librarian Julia Wallace affirmed that connecting schools and libraries to NII would be a very good step. But she also pointed out that the U.S. telephone system is held up as a model for universal access, and that "if we had to go to the public library to use the phone we wouldn't think we had quite enough."

The advisory council includes executives from broadcasting, publishing, electronics manufacture, local government and organized labor. Bearman is dean of the School of Library and Information Science at the University of Pittsburgh.

Two Twin Cities business people are on the advisory council: Vance Opperman, president of West Publishing, and Stanley Hubbard, chair and CEO of Hubbard Broadcasting. Opperman "has been a real delight to work with," said Bearman. "You should have heard how eloquent Vance was about the importance of public libraries and the difficulty of their being underfunded."

The council meets monthly and its members serve two-year terms that began last January. It is not to be confused with the Information Infrastructure Task Force, a group of federal government officials.

Bearman closed her presentation by asking for help. "There is no way we can do this by ourselves. Please help by naming good examples of what works." She seeks documents that address the issues important to the NII. For an example, she named a recent statement on intellectual property by the Association for Research Libraries.

For more information, contact Sarah Maloney, National Telecommunications and Information Administration, 202/482-1835, smaloney@ntia.doc.gov; or gopher to U.S. government/Information infrastructure.

By Phil Norcross

About the Sponsored Programs Information Network (SPIN)

The Sponsored Programs Information Network (SPIN) is a computerized locator system for funding opportunities (federal, nonfederal and corporate) for faculty and institutional research, development and education program support. It is available free of charge to University faculty and staff through ORTTA.

Based on a description of the research areas and/or the type of support sought, faculty and staff can search the Keyword Code Table and Award Type Table to identify codes for specific areas of interest. The Keyword Code Table, a taxonomy developed by SPIN to catalog funding sources, is divided into the following twelve major classifications:

- Agriculture/Food Sciences/Foods
- Arts/Humanities/Cultural Activities
- Behavioral/Social Sciences
- Education
- Energy
- Engineering
- Geographic Terms
- Health and Safety/Medical Sciences/Biomedical
- Law
- Management/Commerce
- Other (Any/All Disciplines)
- Science & Technology/Mathematics/Computer Science

The Award Type Table offers codes that will more specifically target the search results to the award type(s) sought. Some of the award types included in the Award Type Table are:

- Conference — Attend
- Fellowship
- Projects Outside the U.S.
- Publication
- Seed Money/Start-Up Funds
- Student Scholarship
- Training/Professional Development

The result of a search is a set of profiles of applicable funding sources that provides (1) the sponsor's name, (2) the sponsor's contact address and phone number, (3) deadline dates, (4) program titles, (5) objectives or interest areas of the sponsor, and (6) restrictions that would affect the submission of a proposal. This set of profiles is sent to the requestor.

ORTTA's gopher contains a section devoted to SPIN and offers you the opportunity to review the Keyword Code Table within the topics shown above to find keyword codes of interest. You then e-mail a note to the gopher editor (spin@ortta.umn.edu) requesting a SPIN search based on the chosen keyword codes (limit, 20 keywords) and award types (limit, 20).

Your search results will be sent by campus or regular mail. Please provide your name, address and also your phone number on the message in case ORTTA staff need to contact you for clarification. If the results of the search are not satisfactory, you may contact our office for further discussion and guidance in the selection of codes.

For further information regarding the SPIN system, please contact ORTTA through e-mail (spin@ortta.umn.edu) or call 624-9004.

Research and Technology Transfer Administration

Fax Number	612/624-4843		
Financial Reporting Fax Number	612/626-0321		
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Technology Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Assistant Director	Mary Lou Weiss	624-5856	mweiss@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC	Mary Lou Weiss	624-5856	mweiss@ortta.umn.edu
Local, Priv & Corp Foundations, MN Med	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry/Food Companies (Med Sch only) Vol Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS, Foundations, Voluntary Health	Virginia Robinson	626-8267	virginia@ortta.umn.edu
DHHS, Voluntary Health	TBA	624-0035	
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), VA, St of MN, Associations	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Business/Industry/Food Companies (all non-HS)	TBA	624-5571	
AID, USIA, Other Gov (Cities/Counties/Other States), St of MN	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), DOC, NEH, NEA, Other Fed, ACS/PRF	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), USDOT, MNDOT, EPA	TBA		
Patents and Licensing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Lisa Carlson	624-5007	lisa@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! — it is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For other staff only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus: Bldg/Rm#) _____
		City/State: (if off-campus) _____

For other staff changes, please include your mailing label!

Clip and mail this page to

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RESEARCH REVIEW

Office of Research and Technology Transfer

August 1994

Bookstore Spotlights Faculty Titles

The University's East Bank bookstore now devotes a particular set of shelves to recent or long-lived books by University of Minnesota faculty and staff. This summer, those shelves contain about 80 titles, on topics ranging from mass communications, to physics, to poetry, to business management.

The practice is new to the Minnesota Book Center in Williamson Hall and is the work of Terry Labandz in the trade book department. Labandz seeks, she says, "to foster faculty-student-bookstore" relations.

Labandz's bibliography of titles by University people is certainly not complete, nor meant to be. Labandz favors titles with wide appeal among her customers, chiefly students on the East and West Banks. She omits titles that are already stocked among the textbooks in the store and titles that are simply too expensive to stock. Medical titles she leaves to the health sciences bookstore in Moos Tower, which also displays University authors periodically.

To find books by University people, Labandz twice wrote to deans, directors and department heads asking for bibliographies. Response was "uneven" she says. Labandz invites people to tell her of additional titles, or to discuss the prospect of signings and readings. Call Terry Labandz or La Juana Whitmore at 626-0559, fax 625-1861.

The following selection of recent titles by University faculty and staff was supplied by Labandz.

Books by University Faculty and Staff

Adams, John S. (Geography and Humphrey Institute), and Barbara J. VanDrasek (Geography). *Minneapolis-St. Paul: People, Place, and Public Life*. University of Minnesota Press, 1993.

Anderson, Chester G. (English), ed. *Growing up in Minnesota: Ten Writers Remember Their Childhoods*. University of Minnesota Press, 1976.

Anson, Chris M. (Composition), and Lance E. Wilcox. *A Field Guide to Writing*. Harper Collins, 1992.



Inside

Minnesota Sea Grant Address Change	2
Faculty Receive McKnight Research Awards	3
IRB Human Subjects: Research in Acute Care Settings.....	4
Graduate School News	5
NIH: Considers Reforms for Study Sections	6
NIH: When NIH Denies Funding	6
NIH: Suffers Drop in Number of Young Applicants	7
Animal Care: Transferring Animals to Other Institutions	7
NIH: Reminds Labs About Safety Guidelines	8
NSF: Senate Committee Proposed Budget Increase.....	9
OED Seeks Science Terms	9
Program Information.....	10
Faculty Research, Training and Service Awards	16
Med Schools Compare Health Reforms	15
SPIN.....	18

(Continued On Page 13)

Minnesota Sea Grant Address Change

The University of Minnesota Sea Grant College Program has a new address. Effective July 1, 1994, Minnesota Sea Grant director, extension, communication and publication functions will originate from the University of Minnesota, Duluth.

Old Address

University of Minnesota Sea Grant
1518 North Cleveland Avenue, #302
St. Paul, MN 55106

New Address

University of Minnesota Sea Grant
2305 East 5th Street
Duluth, MN 55812-1445
218/726-8106

RESEARCH REVIEW

Volume XXIV/Number 2

August 1994

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated June 13, 1994;** this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; Liz Warren, 626-9895; or Linda Lorenz, 624-6862.**

	07/01/94
	06/30/95
Research	
On-Campus . . . . .	.45.00%
Off-Campus * . . . . .	.24.00%
SAFHL . . . . .	.45.00%
Hornel . . . . .	.45.00%
Other Sponsored Activity	
On-Campus . . . . .	.30.00%
Off-Campus * . . . . .	.24.00%
Instruction	
On-Campus . . . . .	.50.00%
Off-Campus * . . . . .	.26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Assistant	Civil Service
7/1/94 - 6/30/95	23.0%	43.7%	29.8%
7/1/95 - 6/30/96	24.6%	43.9%	31.8%
7/1/96 - 6/30/97	24.9%	44.9%	32.7%

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009.**

Rate changes will be reflected in this section.

Faculty Receive McKnight Research Awards

The University's McKnight Research Awards recognize outstanding scholars in the arts and humanities. Administered by the Office of the Vice President for Arts, Sciences, and Engineering, the awards provide tenured faculty members with \$3,000 per year for three years, to support scholarship or creative work. Four recipients per year are selected by previous recipients; this is the third year the awards have been made. The awards are funded by the University of Minnesota McKnight Arts and Humanities Endowment. The winners of the 1994 McKnight Research Awards are named below, with descriptions of their work based on their award applications.

Lydia Artymiwi, School of Music, plans to study, perform and record Mozart piano concerti with ornamentation by J. B. Cramer and J. N. Hummel. Hummel was Mozart's most-celebrated pupil; Cramer studied under Beethoven. Their embellishments on Mozart concerti are unknown to most performers and musicologists. "These very elaborate and technically challenging additions demonstrate the evolution of the piano as a virtuoso instrument and foreshadow the writing of such composers as Chopin, Liszt and Mendelssohn," says Artymiwi. She and David Grayson, also of the School of Music, began giving lecture-recitals on this work in 1989, including a presentation at the Juilliard School. With musicians from the Minnesota Orchestra and the St. Paul Chamber Orchestra, she plans to record at least three concerti for public release. The McKnight award will go to paying musicians and moving a historic piano. Artymiwi has previously recorded works of Tchaikovsky and Johannes Brahms for Chandos Records.

Anatoly Liberman, Department of German, has finished preparatory work for an etymological dictionary of English. He intends the dictionary to be the first dictionary of modern English word origins that will sum up history and prehistory of words, evaluate the etymological literature, and "open up the world of English etymology to the general public." The work has "enthusiastic support," he says, from the *Oxford English Dictionary* and the Dictionary Society of North America. Liberman has gathered etymological dictionaries for Sanskrit, Greek, Latin, Celtic and Slavic and Germanic languages, and 15,000 articles. Graduate assistants are crucial to the project, says Liberman, and that's who the McKnight award will support. Recent articles by Liberman have appeared in *Scandinavian Studies*, *Slavic and East European Journal*, and *General Linguistics*.

Russell Menard, Department of History, describes himself as growing from a historian of the colonial United States to a historian of the colonial period in all the Americas. He has published on the history of slavery in the Americas, is now studying Spanish, and teaches early history of the Americas.

Menard plans to write comparative history of the Americas, particularly comparative study of governing classes based on biographical dictionaries of legislators, dictionaries created by legislative bodies from Quebec to Chile. Menard plans to use the McKnight award to hire undergraduate research assistants to help him study the biographical dictionaries. He hopes to further support the work with grants from NEH, from which he has three previous grants totalling about \$5 million. For work with the U.S. census, Menard and Steven Ruggles, also of the history department, have been awarded about \$6 million by NIH and NSF over the past decade. Recent articles by Menard have appeared in *The William and Mary Quarterly*, *The American Historical Review*, *Reviews in American History*, and the *Journal of American Ethnic History*.

Valerie Miner, Department of English, plans to finish one novel and start another over the next few years. *Range of Light*, now in its final draft, is "a novel about friendship set in the High Sierra, a mountain range I have come to see as the spine of California imagination." The newer work describes six Scots scattered over the globe between the world wars, and it addresses "questions about the impact of poverty, nationality and immigration on the family as a group and on its individual members." The McKnight award will fund travel, research materials and a research assistant. The new book also "explores the terrain between and beyond the short story and the novel," says Miner; its parts will both stand alone as stories and work together as a single novel. One part will appear in this month's *Ploughshares*. Miner has previously published five novels and two collections of stories. Her most recent book is *Rumors from the Cauldron: Selected Essays, Reviews, and Reportage* (University of Michigan Press, 1992).

Indirect Costs Hold Steady

From 1983 to 1992, indirect costs have been a steady 29 percent to 30 percent of the total cost of new NIH research grants. For competing continuation grants, indirect costs were 30 percent to 31 percent; for noncompeting continuations, they were 32 percent to 33 percent. Those numbers are equivalent to indirect cost rates of 41 percent to 49 percent.

From Washington Fax

IRB: Human Subjects

Research in Acute Care Settings

In the emergency setting, little research progress has been made in the last 20 years, and this gap in medical knowledge is in part created by the restrictions of federal regulations. This concern, as well as others surrounding the revision of such regulations, are being addressed at the federal level. Until federal changes are made, however, researchers need to understand the current limits on acute care research.

First and foremost, patients in emergency situations must be treated with the same respect given in non-emergency situations. That respect includes recognizing their option to participate in research with the intent of developing new and more effective methods of treating future patients.

IRBs reviewing proposals whose subjects are by necessity drawn from this population must, as a part of protecting the rights of these subjects, pay close attention to the different federal regulations governing their involvement in such research.

DHHS regulations (45 CFR 46.166 (d)) state that the informed consent process can be waived in circumstances where there is no more than minimal risk to the subjects and the waiver will not adversely affect the rights or welfare of the subjects. This waiver cannot be applied to acute care research, however, because it will not be of minimal risk.

FDA regulations (21 CFR 50.23 (a)) allow for an emergency exception to informed consent if the situation is life-threatening and there is no alternative method of approved therapy that will provide an equal or greater likelihood of saving the patient's life. The intent of this is to allow physicians, exercising their judgment about the patients' conditions, to use innovative treatments on incompetent patients.

Both of these regulations distinguish between emergency treatment and emergency research. A physician is allowed to waive consent when *treating* a patient because it is presumed that the decision is based on the best judgment of the physician. This differs from a research protocol, where the decision to use an experimental therapy is done by randomization.

In the process of reviewing acute care research protocols, IRBs must carefully assess the risk to the subject. But IRBs also recognize that though an experimental protocol may be a significant risk, traditional emergency treatment is also risky. This is not to say that subjects should be subjected to greater risks because of their vulnerability; only that the high risk of any treatment, experimental or not, that subjects would receive should be considered.

The IRB's role in monitoring such protocols should be more ongoing and involved than its monitoring of less risky studies. Researchers in acute care will be asked to submit their protocols to more frequent monitoring by the IRB to ensure that subjects are being protected and that the research is minimizing risk and maximizing benefits to the vulnerable subjects.

In the future, federal regulations may allow acute care research without subjects' prior consent. Such protocols will warrant special treatment by the IRB. Each study would have to be examined individually to ensure compliance with both DHHS and FDA regulations.

It is hoped that regulatory reform will permit more expansive acute care research. With such reform in regulatory restrictions, carefully designed consent policies will be required. As long as the methods used to obtain consent in an acute care protocol are carried out in an ethically sound manner, and as long as subjects are not confronted with unnecessary risk unrelated to their medical condition, IRBs should permit such studies to take place. Until such reform is codified, IRBs are limited in their discretion to allow research in acute care situations.

Current UMHC policy outlines a distinct order of persons who are able to give consent for treatment of incompetent or unconscious patients and allows for the emergency exception for treatment as outlined by FDA and DHHS.* These policies, however, apply only to treatment, and until further regulatory reform is implemented, IRBs cannot allow such exceptions in clinical research.

By Jennifer Schumi, Research Associate, IRB

* For emergency *treatment* of unconscious, unemancipated or incompetent patients, UMHC policy calls for consent from one of the following, in order of preference:

- a. legal guardian or parent, if the patient is a minor;
- b. the spouse;
- c. an adult son or daughter;
- d. either parent;
- e. an adult brother or sister;
- f. other relative; or
- g. a close personal friend of the patient when there is no one else.

Graduate School News

Preparing Future Faculty:

The Minnesota Model

Mark Brenner, Carol Carrier, Principal Investigators

\$100,000 first year, \$70,000 second year

To develop new approaches to preparing graduate students for the future professorate, the University of Minnesota-Twin Cities, along with Macalester College, Metropolitan State University, Minneapolis Community College, St. Olaf College and the University of Minnesota-Morris, will receive \$170,000 for a two-year project. Funding comes from The Pew Charitable Trusts, which have given \$1.8 million to the Association of American Colleges and Universities and the Council of Graduate Schools to direct the Preparing Future Faculty (PFF) program. The program seeks to improve doctoral student preparedness to assume faculty responsibilities of teaching, service and research at a variety of institutions of higher education.

The Minnesota group is one of five institutional clusters that were successful in national competition with 70 other clusters. The Minnesota proposal was developed by a steering committee of representatives from each of the six participating institutions, led by Mark Brenner from the Graduate School, Carol Carrier from the Office of Human Resources, and Jan Smith and Jane Miller from the University of Minnesota Teaching Opportunity Program for Doctoral Students (TOPDS).

Participation in PFF is open to University of Minnesota doctoral students who have completed TOPDS by taking a course for credit in teaching in higher education, by taking part in a teaching opportunity with guidance from a faculty mentor and a TOPDS teaching consultant, and by constructing a teaching portfolio to document and reflect upon their teaching experience. PFF students will take part in an internship with a faculty mentor on one of the other five Minnesota campuses and become involved in cooperative learning groups designed to acquaint them with the experiences of participants on these campuses. PFF students will teach portions of classes, attend faculty meetings, advise prospective graduate students, and take part in campus-specific faculty activities. Regular sessions held at partner institutions will introduce PFF students to the issues of effective faculty performance on a variety of campuses.

The other lead universities selected for Preparing Future Faculty grants are Arizona State University, Howard University, Northwestern University and the University of Washington. Each of the five doctoral institutions will work with partner schools to integrate teaching and service experience with doctoral student academic and research preparation.

For more information, contact Jane Miller, Coordinator, Preparing Future Faculty, University of Minnesota Office of Human Resources, 1313 5th Street S.E., Suite 228, Minneapolis, MN 55414; 627-4118, fax 627-4349, mill0423@gold.tc.umn.edu.

Mark Brenner is Acting Dean and Vice President

Mark Brenner is now acting vice president for research and acting dean of the Graduate School. He replaces Anne Petersen, who resigned July 15 to become deputy director of the National Science Foundation.

Brenner was appointed by Senior Vice President Ettore Infante, after an "accelerated" internal search. Brenner was previously associate vice president for research and associate dean of the Graduate School. The search for a permanent vice president and dean will probably start in September, says Brenner, and conclude by January.

Petersen's NSF appointment was confirmed by the U.S. Senate on July 1.

National Institutes of Health

NIH Considers Reforms for Study Sections

A recent critique of NIH review for extramural grant proposals suggested the following:

- Experiments with “triage”—early rejection of weak proposals—will be expanded.
- Perhaps budget details needn’t be supplied until it is time for the decisions that depend on them.
- Emphasis on past rather than prospective achievements would be unfair.
- Fixed-amount grants would reduce the need for detailed budget projections.

The critique was a “roundtable discussion” among scientists led by NIH Director Harold Varmus.

Discussion of NIH’s experiments thus far with triage focused mostly on the level of comment that should accompany early rejections. Recommendations ranged from “blunt” to “tutorial.”

The group agreed “without reservation” that detailed information, such as itemized budgets, should not be required of applicants until that stage of review where it is actually needed. Such a “just-in-time” system would avoid budgets becoming outdated while they await review.

Reviewers’ attention should shift, in some cases, from the work proposed to the applicants’ past work, said some of the discussants. The current system, they said, rewards the

ability to sell projects instead of nurturing scientists and rewarding contributions to science. Emphasizing past accomplishments and briefly outlining proposed work would also make proposals easier to write, they said.

Critics of that idea argued that it would perpetuate the “old boy” network and close off opportunity for young, minority and women investigators.

Several participants saw fixed-amount grants of, for example, \$50,000, \$100,000, and \$200,000, as a way to “focus on the science itself” rather than on painstaking checks of elaborate budget projections.

Critics of such a system argued that work costing \$80,000 would get extra money, while work costing \$120,000 would get shortchanged. In reply, others said that hardly any grant is funded at the level proposed and actual costs commonly differ from awards, by as much as \$20,000.

If fixed-amount grants were not large enough, critics argued, the system would discriminate against expensive kinds of research, like that with animal and human subjects. On the other hand, it was pointed out, eight grants in ten are now for less than \$200,000 per year.

Varmus expressed surprise at the favorable response to “modular grants” and said the next step would be an experiment.

From Washington Fax

National Institutes of Health

When NIH Denies Funding

Among fiscal 1990 applicants for NIH funding, 40 percent remained unfunded at the end of 1993. Of the applications that scored in the top 50 percent, 10 percent remained unfunded.

NIH describes the careers of its unsuccessful applicants in a preliminary study prompted by fiscal 1994 House appropriations hearings for NIH. NIH reviewed the subsequent careers of applicants for 1990 independent research grants (R01s and R29s).

The House appropriations subcommittee for Labor, Health and Human Services, Education and Related Agencies has asked NIH for a thorough, long-term study of the matter.

The preliminary study tracked 14,726 applicants for 1990 R01s and R29s—independent investigator research projects and first independent research support and transition (FIRST) grants. NIH funded 3,777 of those, and 2,605 were funded by other mechanisms or still had funding from previous years. So at the end of fiscal 1990, 8,344 of the applicants remained unfunded, and at the end of fiscal 1993, 5,848 remained unfunded.

From Washington Fax

National Institutes of Health

NIH Suffers Drop in Number of Young Applicants

The number of young investigators seeking individual grants from NIH dropped 54 percent between 1985 and 1993, according to a July report from the National Research Council.

In 1985, 3,040 scientists under 37 years old sought individual investigator grants, or ROIs, from NIH. In 1993, there were 1,389 such applicants. For R29 grants, which specifically encourage new investigators, the number of applications dropped 40 percent. The number of applicants in every other age group increased over the same period.

The belief that breakthrough discoveries most likely come from young scientists was stressed during presentation of the report. Understanding the drop in young applicants is important, said coauthor Torsten Wiesel, because "we want to keep scientists active in their most creative years."

The report, titled "The Funding of Young Investigators in the Biological and Biomedical Sciences," was presented at the National Academy of Sciences on July 7. Wiesel is president of Rockefeller University.

The success rate for the young investigators also decreased, from 33 percent in 1985 to 22 percent in 1994. Lower success rates, however, are a general trend for investigators of all ages.

In a follow-up study, the NRC will seek the causes of the decrease in young applicants. It will also study whether young investigators are finding other means of support and

whether similar trends exist in other life science fields. Understanding or reversing the trend will be difficult, however, because there are few records of post-doctoral researchers' career choices.

Among new encouragements to young investigators, the report's authors suggested increasing R29 grants from \$75,000 to \$125,000 per year and placing less emphasis on achieving preliminary results.

As causes for the drop in young applicants, the following were suggested during the presentation:

- University budget cuts have made it harder to move from post-doc to tenured faculty member—the so-called "circling-the-airport" syndrome.
- Young scientists find increasing opportunities in environmental, pharmaceutical and biotechnical corporations.
- Scientists now tend to be older when they earn Ph.D.s and enter NIH competition.
- A larger portion of Ph.D.s are going to foreign nationals who leave the U.S. after graduation.
- More support for NIH center grants and program project grants has led more young scientists to work as research assistants.

From Washington Fax

University Animal Care Committee

Transferring Animals to Other Institutions

Transfers of animals from the University of Minnesota to other institutions need to be reviewed and approved by the University Animal Care Committee.

Investigators requesting animal transfers should fill out the "Request for Transfer of Animals" form and send it to the committee at Box 811, UMHC. The committee veterinarian will then review the request. If the request is controversial—if it involves primates, for example—the veterinarian will pass it on to the full committee. Once approved, the transfer form should be attached to the investigator's protocol.

The transgenic mouse colony is exempt from this policy. Approval of each individual shipment from the colony is *not* necessary.

This is a new policy, and the committee plans to review it after a test period.

For copies of the transfer form, call the animal ordering desk at 624-6169.

NIH Reminds Labs About Safety Guidelines

The NIH recently emphasized its concern for laboratory safety by republishing a list of safety guidelines and directing NIH grantees and contractors to consult them.

"The materials cited are rather old," says Fay Thompson, the University's director of environmental health and safety, "but it's important to make the point that NIH cares about research safety."

Thompson emphasizes that more information on health and safety issues, and assistance in developing appropriate plans and protocols are available from her department. Call 626-6002.

"Health and Safety Guidelines for Grantees and Contractors" (*NIH Guide 23* (17 June 1994)) opens by pointing out that NIH awardees are responsible for protecting their personnel from hazardous conditions, and that NIH may delay funding until hazardous conditions are corrected. The article goes on to say the following:

The government is not legally liable for accidents, illnesses, or claims arising out of research performed under its awards. Assistance in providing a safe work environment for research personnel is available in the guidelines and standards listed below, and awardees are expected to consult them.

Hazards to research personnel include biohazards, chemical hazards and radioactive materials. Biohazards are, for example, HIV, other infectious agents and oncogenic viruses. Chemical hazards are, for example, carcinogens, chemotherapeutic agents, other toxic chemicals and flammable or explosive materials.

Applications and proposals that pose special hazards are typically identified during initial review, but concerns may be expressed by agency staff or consultants at any time prior to award, and funding could be delayed until concerns are resolved to the satisfaction of the awarding office.

Special hazards identified after an award is made may lead to suspension of work pending corrective action by the awardee. (Concerning grant suspension, see 45 CFR 74, subpart M. Concerning contract "stop work" orders, see 48 CFR 12.5.)

Awardees are not required to submit documented assurance of their specific attention to the guidelines and standards cited below. However, awardees should be able

to provide evidence that pertinent health and safety standards have been considered and, where necessary, put into practice. Such evidence may be requested by NIH staff during a site visit, for example.

The documents listed below are available from the Division of Safety, Office of Research Services, National Institutes of Health, Building 31, Room 1C02, Bethesda, MD 20892; phone 301/496-1987.

Biosafety in Microbiological and Biomedical Laboratories, U.S. Department of Health and Human Services, Centers for Disease Control and the National Institutes of Health. HHS publication no. (CDC) 93-8395.

"Recommendations for Prevention of HIV Transmission in Health-Care Settings." *Morbidity and Mortality Report* 35, no. 2S (21 Aug. 1987).

"Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and Other Bloodborne Pathogens in Health-Care Settings." *Morbidity and Mortality Weekly Report* 37, no. 24 (24 June 1988).

Recommendations for the Safe Handling of Cytotoxic Drugs. NIH publication no. 92-2621.

NIH Guidelines for the Laboratory Use of Chemical Carcinogens. NIH publication no. 81-2385.

NIH also recommends the following publications, \$19.95 each, from the National Academy Press; call 800/624-6242.

Prudent Practices for Handling Hazardous Chemicals in Laboratories.

Prudent Practices for Disposal of Chemicals from Laboratories.

Biosafety in the Laboratory: Prudent Practices for Handling and Disposal of Infectious Materials.

Senate Committee Proposed NSF Budget Increase

In mid-July, the Senate committee responsible for appropriations for the National Science Foundation recommended a \$3.5 billion budget for NSF in fiscal 1995.

That is an increase for NSF of \$507 million or 17 percent over fiscal 1994, and an increase over the 1995 budgets proposed by both the House and the president. It is also the largest increase among the budgets covered by the Senate Appropriations Subcommittee for VA, HUD, and Independent Agencies, chaired by Barbara Mikulski of Maryland.

It was Mikulski who last year campaigned to direct NSF to devote about 60 percent of its budget to "strategic" or "applied" research. She is reportedly working to put a similar direction in the NSF reauthorization now being written.

As of July 19, the appropriation that includes NSF was awaiting action on the Senate floor.

Above text and chart below from the *Washington Fax*

Status of the FY95 NSF Budget Request (dollars in millions)

Program	FY94 Level	FY95 Request	House Proposal	Senate Proposal
Research	\$2,163.7	\$2,348.7	\$2,216.9	\$2,300.0
Infrastructure	105.0	55.0	100.0	300.0
Major Equipment	17.0 (a)	70.0	105.0	150.0
Education	569.6	586.0	586.0	606.0
Salaries	118.3	130.7	124.0	124.0
Relocation	5.2	5.2	5.2	5.2
Inspector General	4.0	4.4	4.0	4.4
Total NSF	\$2,982.8	\$3,200.0	\$3,141.1	\$3,489.6

(a) assumes enactment of \$35 million rescission from the FY94 appropriation for Research and Related Activities and the reappropriation of these resources in the FY95 appropriation for Major Research Equipment as proposed in both the House and Senate bills.

Oxford Dictionary Seeks Science Terms

Alan Hughes, chief science editor of the *Oxford English Dictionary* has issued an appeal to the scientific community for help with revision of the *OED*.

Oxford University Press plans to publish a comprehensive revision of the dictionary in 2005. Hughes asks scientists to draw his attention to such information as the following:

- The coinages of particular scientific words.
- Factual errors in *OED* definitions.
- Scientific words and meanings not in the *OED*.
- References to earlier usage of words and meanings already treated in the dictionary, and later uses of those described as obsolete.

The last item is especially useful. The *OED* is a historical dictionary which attempts to trace every word and meaning back to its earliest known use in the English language, as well as give references to the coinages of foreign precursors of English words.

As an example, Hughes cites mail from Professor Joshua Lederberg about C. S. Peirce's philosophical sense of 'abduction,' which is not recorded in the *OED*.

Please e-mail oed3@oup.co.uk, or write to the Chief Science Editor, *Oxford English Dictionary*, Walton Street, Oxford OX2 6DP, UK.

Federal Transit Administration University Research and Training Program

The Federal Transit Administration (FTA) is inviting the academic community to participate in the FY94 University Research and Training Program. The FTA plans to award a number of grants to the nation's institutions of higher learning for research on advanced transit topics.

The program is designed to assist public and private non-profit institutions of higher learning in establishing and conducting research and training activities that address urban and rural transit issues and needs. Specifically, the program aims 1) to promote research and training activities supportive of the goals, mission and programmatic needs of the Federal Transit Administration; 2) to strengthen local and state capability to plan, construct and evaluate transit systems and services; 3) to attract the nation's young talent to public transit careers through practical experience during their academic years; and 4) to energize and support an interaction between academic and local transit planning agencies that elevates the transit industry's understanding of the issues and concepts to an action-oriented level of knowledge.

The general research and training topic areas (not including detailed subtopics) for FY94 are:

- Transit Accessibility (for disabled persons)
- Specialized and Rural Transit (intercity bus service)
- Clean Air and Alternative Fuels
- Financing and Pricing
- Intelligent Vehicle Highway Systems (IVHS)
- Planning and Project Development (demographics)
- Safety and Security
- Livable Communities
- Rural Transit
- Improving FTA Program Outreach
- Linking Transit Development

Applications must identify and address a single topic area. Projects should be designed for completion within a 12-month period, with a final 2 to 3 months dedicated to the preparation and publication of a final project report. The total dollar amount requested from the FTA to support any project should not exceed \$85,000. Cost sharing is required at a minimum of 10 percent of the awarded amount.

Additional emphasis is being placed on Section 11(a) of the Federal Transit Act which authorizes financial assistance for "the training of persons to carry on further research or to obtain employment in organizations which plan, construct, operate or manage urban transportation systems." Prefer-

ence, therefore, will be shown to proposals that include the significant use of students in the research exercise.

The application deadline is **September 1, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Elizabeth Solomon, Federal Transit Administration, Office of Technical Assistance and Safety, Research and Rural Transportation Division, U.S. Department of Transportation, 400 7th Street SW, Room 6100, Washington, DC 20590; 202/366-0242.

National Science Foundation Basic Research in Conservation and Restoration Biology

The Directorate for Biological Sciences, National Science Foundation (NSF), announces a special competition to evaluate and support fundamental research projects aimed at clarifying principles that underlie the conservation and restoration of biological diversity. Biological diversity is broadly defined as the variety of life and its processes.

Appropriate subjects for investigation include natural and managed ecosystems, landscapes, communities, species and populations. In addition, the genetic, behavioral, physiological and ecological processes occurring within these systems, and how human activities affect them, are also appropriate topics for research. Proposals may address any level of evolutionary, ecological, physiological or behavioral analysis, or may seek to integrate across levels or disciplines. The competition is particularly interested in proposals that focus on scientific principles and approaches to the restoration of biological diversity.

Approximately \$1.5 to \$2 million is available to award grants ranging in amount from \$40,000 to \$90,000 for periods of six months to four years.

Divisions in the Directorate for Biological Sciences participating in this competition include Environmental Biology (703/306-1479); Integrative Biology and Neuroscience (703/306-1419); Molecular and Cellular Biosciences (703/306-1440); and the program for Geography and Regional Science (703/306-1754). Prospective investigators are strongly encouraged to contact the appropriate division for additional guidance specific to that division and its programs.

The application deadline is **September 29, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

Social Security Administration

Federal Old-Age, Survivors and Disability Insurance

The Social Security Administration (SSA) announces that competing applications will be accepted for new research grants. The research is intended to add to existing knowledge and to improve methods and techniques for the management, administration and effectiveness of SSA programs.

In general, SSA will fund types of projects that relate to or examine:

1. Women's issues, especially aged women in poverty;
2. Economic and demographic assumptions used in making projections for the Old Age, Survivors and Disability Insurance (OASDI) Trust funds;
3. Issues related to an increase in the retirement age;
4. Issues, using the new beneficiary data system, of how aged individuals become poor and how the economic status of individuals with disabilities and their families change;
5. Issues related to differences in calculated poverty rates between the Survey of Income Program Participation (SIPP) and the Current Population Survey (CPS).

Any state or local government, public or private organization, nonprofit or for-profit organization, or agency, hospital or educational institution may apply for a grant under this announcement.

Grant recipients are expected to contribute toward the project costs; generally 5 percent of the total costs is considered acceptable.

The application deadline is **September 6, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information or background material, contact Ms. Faye Aziz, Coordinator for Extramural Research, Office of Research and Statistics, Social Security Administration, Van Ness Center, room 205, 4301 Connecticut Avenue NW, Washington, DC 20008; 202/282-7215.

National Institute of Standards and Technology

Guide to Programs

The National Institute of Standards and Technology (NIST) is in the process of transforming itself from primarily a measurement laboratory program with three relatively small extramural programs to a full-service technology development, funding, extension and quality improvement partner for U.S. [academia and] industry.

The Institute has recently published a guide to its programs and activities. The guide describes more than 250 NIST research projects, grants and industry outreach programs, services and facilities, followed by contact names, phone numbers, and mail and electronic mail (Internet) addresses.

For an original copy of this guide, call the NIST Publications and Program Inquiries Unit, 301/975-3058. A photocopy copy of the guide is also available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

National Kidney Foundation

Change in Deadline Dates

The National Kidney Foundation has three research funding mechanisms:

Postdoctoral Research Fellowships: New deadline, September 1 (formerly September 15). Approximately 25 new awards will be made.

Young Investigator Grants: New deadline, September 1 (formerly September 15). Ten new awards will be made.

Clinical Scientist Award: New deadline, September 1 (formerly October 1). Two new awards will be made.

For more information contact Neil Kurtzman, President, National Kidney Foundation, 30 East 33rd Street, New York, NY 10016; 800/622-9010, 212/889-2210, fax 212/689-9261.

National Cancer Institute

Research Program Grants in Chemoprevention

CA-94-022

The Division of Cancer Prevention and Control, National Cancer Institute, invites cooperative agreements to support a research and development program of multiple projects directed towards chemoprevention of cancer, requiring a broadly based and multidisciplinary approach. It is expected that each application will describe plans for a mixture of basic, developmental and clinical research from an investigator wanting to focus on a particular study in cancer chemoprevention. Each application should have a general focus on study outcomes and on the application of basic research and development to human subjects and populations.

To be eligible for awards, the application must include a minimum of three scientifically meritorious projects, one of which must involve a clinical trial. The theme might involve a particular agent or class of agents (i.e., anti-initiators or anti-promoters: retinoids, non-steroidal, anti-inflammatory agents), populations (general, at-risk, subjects with pre-cancer or cancer patients free of disease), sites (breast, prostate, lung, colon), or surrogate markers. Relevant pre-clinical and clinical ancillary projects might include *in vitro* and *in vivo* (animal) efficacy studies, pharmacokinetic and pharmacological evaluations, biomarker studies, and nested case-control evaluations.

This RFA will use the cooperative agreement (U19) mechanism. This particular type of research project builds on the leadership of a key principal investigator and the interaction of the participating investigators in order to integrate the individual projects in a way that accelerates the acquisition of knowledge beyond that expected from the same projects conducted separately, without combined leadership or a common theme. The cooperative agreement is an assistance mechanism in which substantial NIH programmatic involvement with the recipient during performance of the planned activity is anticipated.

Approximately \$4.0 million in total costs for the first year of project periods up to five years will be committed to fund four to six awards with an earliest start date of July, 1995.

An optional, nonbinding letter of intent is requested by September 1, 1994. The full proposal is due **October 20, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Marjorie Perloff, M.D., Division of Cancer Prevention and Control, National Cancer Institute, Executive Plaza North, Suite 218, Bethesda, MD 20892-4200; 301/496-4664, fax 301/402-0553.

National Cancer Institute

DNA Damage, Genomic Instability and Breast Cancer

PA-94-079

The Division of Cancer Etiology of the National Cancer Institute (NCI) invites grant applications from investigators interested in establishing whether or not there is greater genomic instability associated with individuals in families with hereditary breast cancer than in individuals who do not have a family history of cancer.

The goal of this program is to encourage research on human breast cancer using molecular, biochemical and cytogenetic techniques. Suitable cells for this approach might include circulating lymphocytes, normal breast epithelial cells, normal fibroblasts or other appropriate cell types. The term "genomic instability" is taken broadly to mean a significant difference, presumably a decrease from an established normal base line, in any of various parameters expected to decrease the integrity of the cellular genome or its expression.

Study of parameters toward this end could include, but need not be limited to 1) determination of the relative capacity of suitable cells from members of breast cancer families to repair DNA damaged by either radiation or chemical carcinogens (analogous cells from individuals who do not have a family history of cancer would serve as normal controls); 2) determination of the relative abilities of suitable cells from breast cancer family members to deactivate genotoxic chemicals compared with those from normal (as defined above) controls; 3) determination of the relative capacity of suitable cells from breast cancer family members to repair chromosome or chromatid damage from radiation or chemicals compared to those from normal controls; 4) comparison of the sensitivity of appropriate cells from breast cancer family members and those from normal controls to the initial damage of DNA by radiation or chemicals; 5) comparison of the relative capacities of suitable cells from breast cancer family members and those from normal controls to maintain the primary sequence of DNA.

The award mechanism is the traditional research project grant, R01. Because the nature and scope of the research proposed may vary, it is anticipated that the size of the award will vary also.

This is an ongoing program with annual deadlines of **February 1, June 1, and October 1**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Written and telephone inquiries are encouraged. Direct such inquiries to Raymond Gantt, Ph.D., Division of Cancer Etiology, National Cancer Institute, Executive Plaza North, Suite 530, Bethesda, MD 20892; 301/496-9326, fax 301/496-1224.

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(Continued From Page 1)

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(Next Page)

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{Next Page}

Medical Schools Compare Health Reforms Funding

Six major health-care proposals are now before Congress. On July 7, the American Association of Medical Colleges published a comparison of five of the plans with regard to medical research and training. The sixth plan, the Republican alternative by Senator Robert Dole, contains no funding for research and training, according to Tom Etten, the University's federal relations officer.

The AAMC comparison includes the following. For more information, call Etten's office, 626-8287.

President's Health Security Act:

Research, no provision.

Teaching hospitals assisted according to gross receipts; funded by surcharge on health-care alliances; total \$3.1 billion in 1996, \$3.8 billion plus inflation in 2000; Medicare IME adjustment reduced to 3 percent.

Nursing education supported by surcharge on alliances; total \$200 million, 1996 through 2000.

Senate Labor and Human Resources Committee:

Research expanded by NIH; funded by surcharge on premiums of 0.25 percent in 1996, 1 percent in 1999.

Teaching hospitals assisted in manner like the Medicare IME adjustment; funded by surcharge on premiums; total \$6.2 billion in 1996, \$10.6 billion plus inflation in 2000; IME adjustment reduced to 5.2 percent.

Nursing education supported by surcharge on premiums; total \$200 million, 1996 through 2000.

Senate Finance Committee:

Research expanded by NIH; funded by 0.25 percent of a 1.75 percent surcharge on premiums; estimated to generate \$1 billion; 20 percent to health services research.

Teaching hospitals assisted in manner like the Medicare IME adjustment, but adjusted to reflect private-sector practices and for high research costs, dental education, and rural hospitals; funded by surcharge on premiums; total \$6.28 billion in 1996, \$10.6 billion plus inflation in 2000; no IME reduction.

Nursing education supported by surcharge on premiums; total \$200 million in 1996, \$200 million plus inflation in 1997.

House Education and Labor Committee:

Research, no provision.

Teaching hospitals assisted according to gross receipts; funded by surcharge on premiums and payrolls; total \$3.8 billion in 1996, \$4.8 billion plus inflation in 2000; no Medicare IME reduction.

Nursing education supported by surcharge on premiums and payrolls; total \$200 million in 1996, \$200 million plus inflation in 1997.

House Ways and Means Committee:

Research expanded by NIH; funded by 0.5 percent of a 1 percent surcharge on premiums; estimated to generate \$700 million.

Teaching hospitals assisted in manner like the Medicare IME adjustment; funded by surcharge on premiums; IME reduced to 5.2 percent.

Nursing education, no provision.

Faculty Titles

(Continued From Previous Page)

Raheja, Gloria Goodwin (Anthropology), and Ann Grodzins Gold. *Listen to the Heron's Words: Reimagining Gender and Kinship in North India*. University of California Press, 1994.

Redig, Patrick T., John E. Cooper, J. David Remple, and D. Bruce Hunter, eds. *Raptor Biomedicine*. University of Minnesota Press, 1993.

Regal, Philip J. (Bell Museum). *The Anatomy of Judgment*. University of Minnesota Press, 1990.

Rickgarn, Ralph L. V. (Housing Services). *Perspectives on College Student Suicide*. Baywood, 1994.

Roberts, Nancy L. (Journalism and Mass Communication). *Dorothy Day and the Catholic Worker*. State University of New York Press, 1984.

Satkowski, Leon (Architecture). *Giorgio Vasari: Architect and Courtier*. Princeton University Press, 1993.

Savelsberg, Joachim J. (Sociology). *Constructing White-Collar Crime: Rationalities, Communication, Power*. University of Pennsylvania Press, 1994.

Schwartz, Dona (Journalism and Mass Communication). *Waucoma Twilight: Generations of the Farm*. Smithsonian Institution Press, 1992.

Senauer, Ben (Agricultural and Applied Economics), Elaine Asp (Food Science and Nutrition), and Jean Kinsey (Agricultural and Applied Economics). *Food Trends and the Changing Consumer*. Eagan Press, 1991.

(Continued On Page 18)

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
June 1994	476	\$ 76,493,849
Awards Processed		
June 1994	189	12,964,305
Proposals Submitted		
July 1993 - June 1994	4,343	687,854,460
Awards Processed		
July 1993 - June 1994	2,793	250,433,318
Proposals Submitted		
July 1992 - June 1993	4,051	644,850,432
Awards Processed		
July 1992 - June 1993	3,005	263,605,563

Analysis of PAF (platelet activating factor) in Rabbit Ocular Tissues

Harald H. Schmid, Hormel Institute
Alcon Laboratories
\$30,000 - 05/01/94-04/30/95

5 -A-Day Power Plus

Cheryl L. Perry, Epidemiology
St of MN, Department of Health
\$108,868 - 07/01/93-04/30/94

Aspirin and the Prevention of Neoplastic Polyps

Jack S. Mandel, Environmental and Occupational Health
Dartmouth-Hitchcock Medical Center
\$64,995 - 03/01/94-09/29/94

Determinants of CBZ and VPA Hypometabolism in Patients

James C. Cloyd, Pharmacy Practice
Angela Birnbaum, Neurology
United States Pharmacopeial Convention
\$15,000 - 05/01/94-04/28/95

Project Grow

Gerald R. Miller, MES-Management Operations
Bush Foundation
\$180,000 - 05/01/94-04/30/97

A Study to Confirm the Safety and Efficacy of Interleukin-1

Frank B. Cerra, Surgery
Synergen, Inc.
\$93,420 - 11/01/93-08/01/94

Clinical Issues Regarding Gambling Treatment in Minnesota

Ken Winters, Pediatrics
Randy Stinchfield, Pediatrics
St of Mn, Department of Human Services
\$71,000 - 01/01/94-01/31/96

Interactions of C3 With Bacterial Pathogens

Margaret Hostetter, Pediatrics
NIH, NIAID
\$173,971 - 05/01/94-04/30/95

Insulin Resistance and Hypertension in Obese Dogs

Albert P. Rocchini, Pediatrics
NIH, NHLBI
\$174,080 - 05/01/94-04/30/95

Children's Cancer Group

William G. Woods, Pediatrics
NIH, NCI
\$322,722 - 03/15/94-11/30/94

Randomized Double-blind Comparative Study of Mycophenolate, Mofetil, Azathioprine

Spencer Kubo, Medicine
Syntex Research Incorporated
\$349,854 - 01/13/94-02/01/98

University of Minnesota Cell Production Center

J. Jeffrey McCullough, Laboratory Medicine and Pathology
Baxter Healthcare Corporation
\$60,000 - 10/28/93-10/28/96

International Society for Experimental Hematology Meeting

John Kersey, Cancer Center
NIH, NCI
\$25,000 - 05/01/94-04/30/95

Early Detection Lung Transplant Rejection/Infection

Stanley M. Finkelstein, Laboratory Medicine and Pathology
Marshall I. Hertz, Medicine
Warren J. Warwick, Pediatrics
NIH, NINR
\$234,776 - 04/15/94-03/31/95

Scarce Medical Services Contract - Anesthesiology

Richard J. Palahniuk, Anesthesiology
Veterans Administration
\$267,599 - 01/01/94-12/31/94

Calcium Control of Golgi Reorganization During Cell Motility

Paul Sammak, Pharmacology
Minnesota Medical Foundation
\$18,500 - 06/01/94-05/31/95

Biology and Genetics of Toxic Shock Syndrome Toxin-1

Patrick M. Schlievert, Microbiology
New York University
\$74,563 - 05/01/94-04/30/95

Proteoglycans Inhibit Sensory Neuron Outgrowth

Paul C. Letourneau, Cell Biology and Neuroanatomy
Diane M. Snow, Cell Biology and Neuroanatomy
American Paralysis Association
\$40,000 - 06/01/94-05/31/95

Library Support for Distance Education

Joseph Branin, University Libraries
Bush Foundation
\$25,000 - 05/01/94-04/30/95

45th Anniversary Collection Development-Kerlan

Karen N. Hoyle, University Libraries
F.R. Bigelow Foundation
\$15,000 - 06/01/94-12/31/95

High-efficiency Super-charged Engine Research

Perry L. Blackshear, Mechanical Engineering
Ford Motor Company
\$58,136 - 04/01/94-09/30/94

Research on Foam Filter Media for Vehicle Air Induction System

Benjamin Y. Liu, Mechanical Engineering
Kenneth L. Rubow, Mechanical Engineering
Ford Motor Company
\$209,869 - 05/01/94-04/30/96

Project Director of the American Mathematical Society (AMS) Task Force on Excellence in Scholarship

Thomas R. Berger, School of Mathematics
American Mathematical Society
\$20,994 - 03/15/94-08/15/95

Molecular Biology

Avner Friedman, Institute for Mathematics and Its Applications
Willard J. Miller, School of Mathematics
NIH, NCHGR
\$40,000 - 06/06/94-01/05/95

Dakota County/LCMR Optical Brightener Study

E. Calvin Alexander, Jr., Geology and Geophysics
Dakota County
\$32,519 - 01/01/94-06/30/95

Cellular Modeling and Dynamical Systems Analysis of Spatial Patterns in Sedimentary Systems

Christoph Paola, Geology and Geophysics
Richard B. Moeckel, School of Mathematics
National Science Foundation
\$68,504 - 03/01/94-08/31/96

Electrical Conductivity of Olivine-synthetic Melt Rocks

Barbara J. Wanamaker, Geology and Geophysics
National Science Foundation
\$49,085 - 02/15/94-07/31/95

Geologic Drilling and Mapping, East-Central Minnesota

Glenn B. Morey, Minnesota Geological Survey
Val Chandler, Minnesota Geological Survey
Mark A. Jirsa, Minnesota Geological Survey
St of MN, Department of Natural Resources
\$240,000 - 09/16/93-06/30/95

Distributed Multimedia Research Center

David H. Du, Computer Science
Donald Riley, Academic Affairs
Network Systems, Inc.
\$35,000 - 07/01/94-06/30/95

Advanced Multimedia Communication Systems

David H. Du, Computer Science
3M Company
\$26,571 - 12/16/93-06/15/94

Distributed Multimedia Research Center

David H. Du, Computer Science
Donald Riley, Academic Affairs
Honeywell, Inc.
\$50,000 - 09/16/93-09/15/94

Mechanisms of Enzyme Inactivation by Cyclopropyl Groups

Hung-Wen Liu, Chemistry
NIH, NIGMS
\$193,885 - 04/01/94-03/31/95

Respiratory System Mechanics

Theodore A. Wilson, Aerospace Engineering and Mechanics
Baylor College of Medicine
\$38,751 - 04/01/94-03/31/95

Minnesota Freight Flows 1990

Candace Campbell, Humphrey Institute
St of MN, Department of Transportation
\$59,600 - 02/22/94-06/30/94

Kellogg Food Systems Professions Education Initiative

Richard L. Jones, Entomology
W.K. Kellogg Foundation
\$133,600 - 04/01/94-09/30/95

Corn Management Research

Dale R. Hicks, Agronomy and Plant Genetics
William Lueschen, NW Agricultural Experiment Station, Crookston
Minnesota Corn Growers Association
\$90,000 - 11/30/93-12/31/96

Herbivory and Regeneration of White Cedar and White Pine

Lee E. Frelich, Forest Resources
Peter B. Reich, Forest Resources
St of MN, Department of Natural Resources
\$20,000 - 04/01/94-12/31/96

Campus Program for Japanese Teachers

Mark Landa, English as a Second Language
Council on International Educational Exchange
\$66,795 - 05/01/94-09/30/94

The Health Benefits of Consumption of Dairy Products

Daniel D. Gallaher, Food Science and Nutrition (CHE)
Linda J. Brady, Food Science and Nutrition (Agr)
Paul Brady, Food Science and Nutrition (CHE)
Sanofi Bio Industries
\$28,800 - 12/22/93-11/30/94

American Association for Marriage and Family Therapy (AAMFT) Practice Patterns Survey and Review of MFT Outcome And Effectiveness Studies

William Doherty, Family Social Science
AAMFT Research and Education Foundation
\$16,503 - 04/01/94-03/30/95

Literacy, Life Skills, Training and Transition

Rosemarie Park, Curriculum and Instruction
James M. Brown, Vocational and Technical Education
St of MN, Department of Corrections
\$64,322 - 01/15/94-12/14/96

Rehabilitation Research and Training Center on Medical Conditions Associated with Aging and Mental Retardation

Deborah Anderson, Educational Psychology
Scott McConnell, Educational Psychology
University of Illinois
\$42,490 - 10/01/93-09/30/94

Alliant Techsystems Health Investment Program

Robert C. Serfass, Kinesiology/Leisure Studies
Ava J. Walker, Kinesiology/Leisure Studies
Alliant Techsystems Inc.
\$100,000 - 04/01/94-03/31/96

Minnesota Rehabilitation Research Training Program

Robert H. Bruininks, Educational Psychology
Robert W. Blum, School of Public Health
U.S. Department of Education
\$150,000 - 03/01/94-02/28/95

Summer Interns to Study Biodiversity and Ecosystem Functions

G. David Tilman, Ecology, Evolution and Behavior
Andrew Mellon Foundation
\$40,000 - 06/01/94-10/31/96

Endangered Species Exhibition and Public Education Project

Donald Luce, Bell Museum of Natural History
Kendall W. Corbin, Ecology, Evolution and Behavior
USDI, Fish and Wildlife Service
\$100,000 - 09/09/93-10/31/94

Morris Child Care Center

Cathleen Brannen, Finance, Morris
West Central Minnesota Initiative Fund
\$20,000 - 05/01/94-04/30/95

Minority High School Student Research Apprentice Program

Gerald L. Hill, School of Medicine, Duluth
NIH, NCRR
\$31,000 - 05/05/94-02/28/95

Faulty Detection in Chemical Process Industry

Kewen Yin, Chemical Engineering, Duluth
National Science Foundation
\$18,000 - 06/15/94-05/31/95

About the Sponsored Programs Information Network (SPIN)

The Sponsored Programs Information Network (SPIN) is a computerized locator system for funding opportunities (federal, nonfederal and corporate) for faculty and institutional research, development and education program support. It is available free of charge to University faculty and staff through ORTTA.

Based on a description of the research areas and/or the type of support sought, faculty and staff can search the Keyword Code Table and Award Type Table to identify codes for specific areas of interest. The Keyword Code Table, a taxonomy developed by SPIN to catalog funding sources, is divided into the following twelve major classifications:

- Agriculture/Food Sciences/Foods
- Arts/Humanities/Cultural Activities
- Behavioral/Social Sciences
- Education
- Energy
- Engineering
- Geographic Terms
- Health and Safety/Medical Sciences/Biomedical
- Law
- Management/Commerce
- Other (Any/All Disciplines)
- Science & Technology/Mathematics/Computer Science

The Award Type Table offers codes that will more specifically target the search results to the award type(s) sought. Some of the award types included in the Award Type Table are:

- Conference — Attend
- Fellowship
- Projects Outside the U.S.
- Publication
- Seed Money/Start-Up Funds
- Student Scholarship
- Training/Professional Development

The result of a search is a set of profiles of applicable funding sources that provides (1) the sponsor's name, (2) the sponsor's contact address and phone number, (3) deadline dates, (4) program titles, (5) objectives or interest areas of the sponsor, and (6) restrictions that would affect

the submission of a proposal. This set of profiles is sent to the requestor.

ORTTA's gopher contains a section devoted to SPIN and offers you the opportunity to review the Keyword Code Table within the topics shown above to find keyword codes of interest. You then e-mail a note to the gopher editor (spin@ortta.umn.edu) requesting a SPIN search based on the chosen keyword codes (limit, 20 keywords) and award types (limit, 20).

Your search results will be sent by campus or regular mail. Please provide your name, address and also your phone number on the message in case ORTTA staff need to contact you for clarification. If the results of the search are not satisfactory, you may contact our office for further discussion and guidance in the selection of codes.

For further information regarding the SPIN system, please contact ORTTA through e-mail (spin@ortta.umn.edu) or call 624-9004.

Faculty Titles

[Continued From Page 15]

Sprengnether, Madelon M. (English). *The Spectral Mother: Freud, Feminism, and Psychoanalysis*. Cornell University Press, 1990.

Stern, David, James Stone III (Vocational and Technical Education), Charles Hopkins (Vocational and Technical Education), Martin McMillion, and Robert Crain. *School-Based Enterprises: Productive Learning in American Schools*. Jossey-Bass, 1994.

Ward, Jean (Journalism and Mass Communication), and Kathleen Hansen (Journalism and Mass Communication). *Search Strategies in Mass Communications*. 2d ed. Longman, 1992.

Weinsheimer, Joel C. (English). *Eighteenth-Century Hermeneutics: Philosophy of Interpretation of England from Locke to Burke*. Yale University Press, 1993.

_____. *Gadamer's Hermeneutics: A Reading of Truth and Method*. Yale University Press, 1985.

Wells, William (Journalism and Mass Communication), John Burnett, and Sandra Moriarty. *Advertising: Principles and Practice*. 2d ed. Prentice Hall, 1992.

ORTTA Telephone Numbers

A Quick Reference Guide

Research and Technology Transfer Administration

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Technology Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	mweiss@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC	Mary Lou Weiss	624-5856	mweiss@ortta.umn.edu
Local, Priv & Corp Foundations, MN Med	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry/Food Companies (Med Sch only) Vol Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS, Foundations, Voluntary Health	Virginia Robinson	626-8267	virginia@ortta.umn.edu
DHHS, Voluntary Health	TBA	624-0035	
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), VA, St of MN, Associations	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Business/Industry/Food Companies (all non-HS)	TBA	624-5571	
AID, USIA, Other Gov (Cities/Counties/Other States), St of MN	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), DOC, NEH, NEA, Other Fed, ACS/PRF	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), USDOT, MNDOT, EPA	TBA		
Patents and Licensing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Lisa Carlson	624-5007	lisa@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! — it is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For other staff only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus: Bldg/Rm#) _____
		City/State: (if off-campus) _____

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RESEARCH REVIEW

Office of Research and Technology Transfer

August 1994

Conflict of Interest

NSF and HHS Publish New Conflict of Interest Policies Preliminary Evaluation Finds University is Already in Compliance

The University appears to be fully prepared for the new federal conflict of interest policies published last June, according to Mark Brenner, acting vice president for research.

"I'm 90 percent sure we're in compliance with the NSF policy. The NIH policy I need to study yet," said Brenner in mid-August. He also said that Christine Rinik, associate University attorney, will soon give legal opinion on the matter.

Patents and Licensing reorganized, renamed.
See page 3.

"The University is prepared to comply with this," said Tony Potami, associate vice present for research and technology transfer. "I think the research community should be pleased that the federal government didn't overreact. From what NSF and HHS originally proposed, they have come a long way.

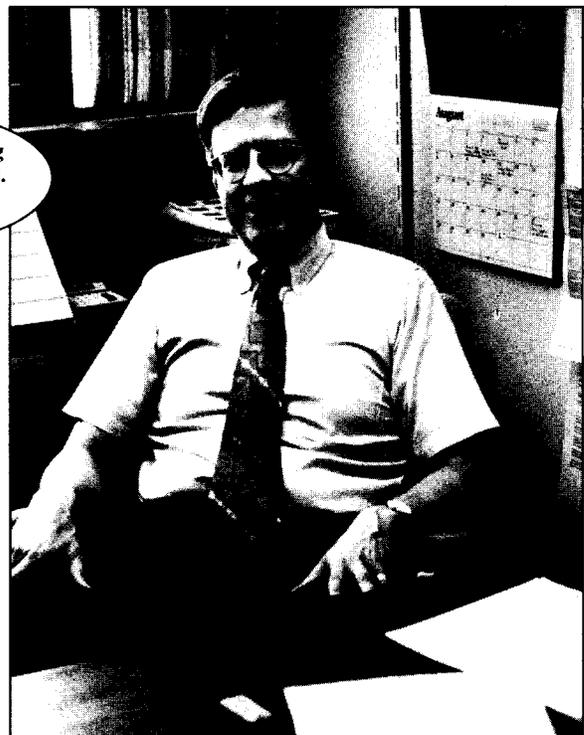
"In both cases the federal agencies understood that when the results of research can be commercialized, they should be commercialized," he added. "That is one way publicly funded research benefits society."

The Council on Governmental Relations, an organization representing about 135 research universities, has only minor criticisms of the new policies, said Potami, a council member.

The University of Minnesota's conflict of interest policy was meant to anticipate the new policies from NSF and NIH, and appears to have succeeded in that respect, in general and in many details. The University policy was finalized by the regents last April and took effect July 1.

The NSF policy is *final*, not proposed, as reported elsewhere, and will take effect June 28, 1995. It is based on a proposed policy published July 1992.

The policy from the U.S. Department of Health and Human Services, which includes NIH, is *proposed*, and the HHS invited comment on several specific issues by August 29. The



Joseph Bloomer, M.D., earned a MERIT award from NIH, p. 4.

Inside

NSF: Regional Outreach Meetings	2
An Aggressive Push to Transfer Faculty Inventions	3
Joseph Bloomer Earns MERIT Award for Liver Research.....	4
IRB: Human Subjects: Finder's Fees in Patient Recruitment:	
Incentive to Coerce?	6
FY 1994 Proposal and Award Activity	7
Graduate School News	11
Program Information	14
Grantsmanship for Beginners	20
Faculty Research, Training and Service Awards	21

(Continued On Page 8)

Index of Research Review

An index for fiscal year 1994 (July 1993 through June 1994) of the *Research Review* is now available. Copies of the index may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

National Science Foundation Regional Outreach Meetings

The National Science Foundation (NSF) will be continuing its series of regional outreach meetings with the NSF Midwest Regional Grants Seminar hosted by Northwestern University, Evanston, Illinois, October 27-28, 1994.

This seminar will provide researchers and research administrators in the Midwest an opportunity to learn more about NSF's role, budget, programs, grant policies, proposal requirements and much more. Participation is limited to 300; registration priority is for Midwest region institutions.

For brochures and registration materials (there is a nominal charge to cover costs), please fax name, title, institutional affiliation and address to 708/491-4800. If a fax machine is not available, write to NSF Regional Seminar, c/o Office of Research and Sponsored Programs, Northwestern University, 633 Clark Street, room 2-502 Crown, Evanston, IL 60208-1110. If you need additional information, call NSF at 703/306-1243 or contact policy@nsf.gov.

RESEARCH REVIEW

Volume XXIV/Number 3

September 1994

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated June 13, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850**; **Doyle Smith, 626-9741**; **Liz Warren, 626-9895**; or **Linda Lorenz, 624-6862**.

07/01/94
06/30/95

Research

On-Campus	.45.00%
Off-Campus *	.24.00%
SAFHL	.45.00%
Hormel	.45.00%

Other Sponsored Activity

On-Campus	.30.00%
Off-Campus *	.24.00%

Instruction

On-Campus	.50.00%
Off-Campus *	.26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Assistant	Civil Service
7/1/94 - 6/30/95	23.0%	43.7%	29.8%
7/1/95 - 6/30/96	24.6%	43.9%	31.8%
7/1/96 - 6/30/97	24.9%	44.9%	32.7%

For questions regarding fringe benefit rate development or the breakdown of charges, call Vivian Fickling at 624-2009.

Rate changes will be reflected in this section.

Patents and Technology Marketing

An Aggressive Push to Transfer Faculty Inventions

A strategic review of the Office of Patents and Licensing by current staff and external consultants has resulted in a strategic reorganization and revitalization. "We need to refocus our efforts on helping faculty to patent

ogy scout in PTM. This person would have experience in both academic science and industrial R&D. The individual's main responsibility would be to meet with research groups throughout the University to discuss ideas for new technolo-



ORTTA's Patents and Technology Marketing staff, clockwise from upper-left: Bob Hicks, Erhard Bieber, Laurel Corgard, Jane Mikla, Maria Vrentzou, Julie Figg, Laurel Halfpap, Dave Lindquist, Grace Malilay, Tony Strauss, Jon Parshall, Kim Barnes, Jim Severson, Elaine Pioske.

commercializable inventions and on marketing those technologies to companies, preferably Minnesota companies," says Tony Potami, associate vice president for research and technology transfer.

That refocusing is symbolized by changing the office's name to "Patents and Technology Marketing," a division of the Office of Research and Technology Transfer Administration (ORTTA). "We want faculty to know where to come to patent, and we want faculty and companies to know that we are aggressively marketing technologies to industry," Potami says. Another reason for the name change was the lack of understanding of the term "licensing," which some confuse with licensing of professional practitioners.

Strategic planning also resulted in a two-year schedule for reorganizing and expanding the staff of Patents and Technology Marketing (PTM). The division is being split into two work teams: Health Technologies; and Mechanical, Chemical, Electrical, and Biological Technologies. Recruitment is underway to add four new positions to the staff: a director and a senior licensing associate for the Health Technologies team; and a director and a senior licensing associate for the Mechanical, Chemical, Electrical, and Biological Technologies team.

Potami is also working with local companies and venture capital firms to develop and fund a new position of technol-

ogy scout in PTM. This person would have experience in both academic science and industrial R&D. The individual's main responsibility would be to meet with research groups throughout the University to discuss ideas for new technologies and to help faculty develop high-quality disclosures of inventions for review by the PTM staff and the Technology Evaluation Council (see page 5), particularly those that might have potential as business start-ups.

PTM staff are currently assisted by three summer interns from the Carlson School of Management: Kim Barnes, Jon Parshall, and Maria Vrentzou. The interns, like the rest of the staff, make extensive use of Minnesota Project Outreach (MPO) to do patent and literature searches and to find companies with specific technology needs. MPO was developed and pilot-tested by ORTTA staff and is now a state-assisted technical information network provided by Teltech, Inc., and adminis-

tered by Minnesota Technology, Inc. About 400 Minnesota technical companies with annual revenues less than \$25 million have on-site access to MPO, and there are 73 public access sites around the state.

Tools like MPO and assistance from interns and members of the Technology Evaluation Council have helped PTM staff survive a difficult period of dealing with conflict of interest and legal issues, and with the increasing complexity of technology transfer negotiations. "We have been on a learning curve in terms of many of these issues, but they're not reasons to back off of research and technology transfer, they're reasons to push ahead," Potami says.

"We have the support of the regents, President Hasselmo, Provost Infante, and many other University administrators and faculty to make the University of Minnesota a leader in technology transfer and a more effective contributor to the economic vitality of the state."

Note: If you are interested in more information about technology transfer, the brochure titled "Protecting and Marketing Faculty Inventions" and a packet of materials about technology transfer are available from Patents and Technology Marketing; call 624-0550.

Joseph Bloomer Earns MERIT Award for Liver Research

There is a disease, *protoporphyrin*, that makes its victims hypersensitive to light. They don't go out in the sun; they avoid windows; they sometimes react badly to fluorescent lights. And when the disease leads to a liver transplant, they have to fear the bright lights of the operating room.

"Protoporphyrin captures light and triggers a chemical reaction in their skin," explains Joseph Bloomer. "In minutes it causes intense itching, burning—like a real bad sunburn. One of our transplant patients got third-degree burns from the OR lights. We had to put filters over them. It's a very hard way to live, and it's not an easy disease to take care of."

Porphyryns are a class of pigments in living cells, from bacteria to human livers. Chlorophyll is a porphyrin derivative; so is *heme*, the active ingredient in hemoglobin and an essential part of human cell respiration. *Protoporphyrin* is the substrate for the final step of heme synthesis. In the disorder *protoporphyrin*, Bloomer has shown, faulty versions of the enzyme ferrochelatase (FC) fail to incorporate iron into the heme, and the unused substrate, *protoporphyrin*, accumulates to the point of doing damage.

Protoporphyrin is one of several disorders of porphyrin synthesis in humans, each associated with faults in a particular enzyme. They may cause skin problems, abdominal pain, paranoia, seizures, and respiratory paralysis. None of the porphyrias are common problems, fortunately. *Protoporphyrin* seems to appear in the U.S., at varying degrees of severity, in one in 5,000 to 10,000 people.

What brought *protoporphyrin* to Bloomer's attention 20 years ago was liver failure in about 10 percent of its victims. Those liver failures might be avoided if there were a way to tell which patients were at risk. Bloomer plans to solve that problem over the next few years.

"What I propose is to identify the genetic mutations which lead to *protoporphyrin*. There might be certain mutations associated with more severe phenotypes. If we could identify them, that would help us predict those patients who are likely to have more trouble, and so lead us to more aggressive treatment before a transplant is necessary," Bloomer says. "Medical therapy might prevent the liver damage, so might gene therapy."

The difficulty in finding the mutations Bloomer seeks is that many different mutations of the gene for FC probably lead to *protoporphyrin*, and homozygous patients may or may not be at greater risk than heterozygous patients. "Researchers of another porphyria, acute intermittent porphyria, have found about 40 mutations involved," says Bloomer.

Bloomer's plans involve culturing cell lines from 25 to 50 human subjects, expressing cDNA in *E. coli*, sequencing the approximately 1,300 base pairs in FC genes, and then correlating the mutations with FC activity and the various clinical manifestations of the disease.

After 18 years of NIH support for his porphyria studies, Bloomer has just received an NIH MERIT award of \$230,000 a year for five years, and maybe a three-year extension beyond that. MERIT awards provide long-term, secure support to "distinctly superior" researchers, and save them from interrupting research every year to write their grant proposals. Recipients are selected by NIH from among regular grant applicants.

Bloomer is a professor of medicine and director of the Department of Medicine's Division of Gastroenterology,

(Continued On Next Page)

University of Minnesota Has Long Led Research in Porphyrin Metabolism

Cecil Watson began study of porphyrin metabolism at the University in the 1930s, and "the University has been leading U.S. porphyrin research ever since," says Joseph Bloomer, hepatologist in the Department of Medicine.

Watson chaired the Department of Medicine from 1945 to 1966. He developed diagnosis and treatment for porphyrias, sometimes-deadly disorders in porphyrin synthesis. When Watson retired, his lab moved to Abbott-Northwestern Hospital. When Joseph Bloomer arrived at the University to continue Watson's work, the "Watson Laboratory" came back to the University.

"We have now transplanted more livers for patients with *protoporphyrin*—five of them—than any other place in the world," says Bloomer. The first animal models for *protoporphyrin*—four Limousin calves that hid behind haystacks to avoid the sun—were also discovered here, by George Ruth in the Department of Veterinary Pathobiology in 1977.

Bloomer is now campaigning to endow the Watson Laboratory, so that it is not dependent on his NIH grants and can more securely support the young investigators who train there. The campaign is half-way to its million-dollar goal. Leading gifts to the campaign have come from Joyce Watson, Cecil's widow; Elinor Watson Bell, his sister; and Betsy Bennett, widow of porphyria patient Adrian Bennett.

JPN

Hepatology and Nutrition. His co-investigators and collaborators for porphyria studies include James Straka and Jeffrey Rank in the University's Department of Medicine, George Ruth in Veterinary Diagnostic Medicine, David Brenner at the University of North Carolina, Ellis Kempner at NIH, and Larry Bowers at the University of Indiana. With surgeon Frank Cerra and chemical engineer Wei-Shou Hu, Bloomer has also collaborated in development of the bio-artificial liver.

Bloomer was recently elected chair of the Gordon Research Conference for the Study of Pyrrole Compounds, an international research group. This fall he joins the council of the American Association for the Study of Liver Diseases, and he will become the association's president in 1999.

Bloomer joined the University in 1979, after eight years at Yale University. He earned his bachelor's degree at MIT and M.D. at Case Western Reserve, then worked at UC San Francisco and NIH. He is a member of the American College of Physicians, the American Society for Clinical Investigation, and the Association of American Physicians, and he has served as an investigator for the Howard Hughes Institute.

For further reading on porphyrias, see the following:

Bloomer, Joseph, James Straka and Jeffrey Rank. "The Porphyrias." In *Diseases of the Liver*, 7th ed., Leon Schiff and Eugene R. Schiff, eds. Lippincott, 1993, pages 1438-1459.

By Phil Norcross

Critique of Peer Review

Peer reviews for NIH, NSF and the National Endowment for the Humanities (NEH) "appear to be working reasonably well," according to the U.S. General Accounting Office, but GAO also recommends measures to better ensure expert, unbiased review.

Elite institutions are not disproportionately represented on review panels, says GAO, nor are particular regions of the country. NIH peer reviewers tend to have less personal familiarity with applicants and less expertise in the precise subject of proposals, while NSF reviewers tend to have more expertise and more familiarity, says the GAO.

Young scholars and low academic ranks are underrepresented among peer reviewers for NIH, NSF and NEH, despite studies of journals showing that young reviewers give better reviews, says GAO.

Women are generally represented among reviewers in fair proportion to the gender of applicants, says GAO, but not enough women serve on panels for some NSF programs.

Technology Evaluation Council

The Technology Evaluation Council (TEC) was established in 1991 by the University of Minnesota Office of Research and Technology Transfer. TEC members attend bimonthly meetings to advise Patents and Technology Marketing staff regarding technology transfer matters. After signing confidentiality agreements, members receive information about recently disclosed inventions or about technologies undergoing patenting and licensing. They then provide nonbinding advice on the inventions' technical merit and commercial prospects, and they suggest companies and contact persons for more information or as licensing prospects.

"The TEC volunteers give us a better view of the real world from an industry perspective, and they have provided excellent advice and valuable contacts to help us evaluate faculty disclosures and locate potential licensees," says Tony Potami.

Current members of the TEC are:

Thomas Brunelle, President
LecTec Corporation

Paul Citron, Vice President
Ventures Technology, Medtronic, Inc.

Mitch Dann, President
M. Dann & Company

Mark Knudson, Partner
Medical Innovation Partners

Lester Krogh, retired Vice President for Research
3M Company

Arthur Kydd, President
St. Croix Management Group

Steve Mercil, Equity Fund Manager
Minnesota Technology, Inc.

Spence Morley, Managing Principal
St. Paul Growth Ventures

Chuck Muscoplat, Executive Vice President
New Business, MGI Pharma, Inc.

Albert Riley, President, SOTA TEC Fund
Blandin Foundation

Larry Shearon, Vice President, Corporate Technology
Medtronic, Inc. (alternates with Citron)

Joseph Shuster, Chairman
Teltech, Inc.

For a free copy of the GAO study, "Peer Review: Reforms Needed to Ensure Fairness in Federal Agency Grant Selection" (24 June 1994), call 202/512-6000. Ask for PEMD-94-1.

From *Washington Fax*

Finder's Fees in Patient Recruitment: Incentive to Coerce?

Author's note: The following editorial reflects the opinion of many, but not necessarily all, members of the University IRB, and is the subject of continuing discussions.

A problem in many research protocols is the difficulty of finding eligible subjects. One solution has been to offer incentives for doctors or current subjects to refer their patients or friends to a particular study. Finder's fees have been employed in varying forms in a number of studies, although never explicitly approved by IRBs. The practice undermines not only the patient's autonomy, but also affects public trust and respect for the research community. IRBs reviewing studies with such methods of subject recruitment must carry out careful and thorough initial and ongoing review to eliminate potential for abuse. Although the IRB of the University of Minnesota does not explicitly prohibit finder's fees, researchers intending to use them to recruit subjects should be prepared for more rigorous and stringent review, because of the potential for coercion and violation of the subject's right to make autonomous decisions.

A question central to this issue concerns cost—if a pharmaceutical company offers incentives to doctors for referring their patients to a study, who pays the price? Usually, the company's expenses are passed on to patients through higher drug prices, and rarely, if ever, do they learn the reasons for these increases. "In practical terms, the increased cost created by finder's fees is paid directly by the patient because of the high cost of prescription drugs. Is it ethical for physicians to create a situation in which they receive incentive payments for enrolling patients in clinical trials, and then pass the cost of this practice on to the patients?"¹ It is legitimate for the cost of a drug to include some costs of R&D, but finder's fees are not part of the social contract between drug manufacturers and consumers, and there is no ethically defensible justification for expecting future recipients of a once-experimental medication to unknowingly subsidize physician incentives.

Further, patients are frequently unaware that incentives exist in trials where they are participants. Researchers should be obligated to reveal such information to their subjects and to advise them of compensation the institution would receive as a result of their participation. "[L]etting the patient know that we are earning money on his body, that it is in our interest for him to sign on and complete the study, can only increase his freedom to decide."² Clearly, it is ethically unsound for a researcher to engage in research and accept compensation from pharmaceutical companies without acknowledging it to the research subjects.

An alternative method of compensation, less coercive than the usual finder's fee arrangement, would be for the company to donate new equipment or materials for a laboratory or a library to the center conducting the research, compensating the physician-investigators for their work and referrals. This method of reward would not have the potential for abuse of the subject's autonomy that the fee method has, because the donation is not contingent on the number of patients referred by any particular physician. This type of compensation should also be disclosed to the research participants.

Others believe that it is not appropriate to inform subjects of finder's fees, saying "disclosure—i.e., making the patient aware of the finder's fee—is not a good compromise, because of the risk that even knowing of its existence may cause patients to question the validity or worth of the research project."³ Yet as a research institution, we are obligated to tell our subjects if such incentives may affect their physicians' recommendations to participate in a research study. Subjects' faith in the research community and the University will be questioned more if they learn later that their participation provided their physicians or the institution with some monetary reward, rather than if they are told up front.

Although it will always be necessary to find new ways to recruit subjects, the use of finder's fees is an ethically unacceptable way of accomplishing that task. "[W]e need continued development of a more balanced doctor-patient relationship, one that will ensure respect for patient autonomy. Equally important are continued efforts to educate the public about the importance of participating in clinical trials. Clearly, finder's fees serve no practical purpose in achieving any of these goals, and they further complicate other important ethical issues in clinical research."⁴

By Jennifer Schumi, IRB Research Associate

1. Elizabeth A. Maher, M.D., Ph.D., "An Analysis of Finder's Fees in Clinical Research," *Canadian Medical Association Journal* 150 (15 January 1994): 256.
2. Howard M. Spiro, M.D., "Mammon and Medicine," *JAMA* 255 (7 March 1986): 1175.
3. Stuart E. Lind, M.D., "Finder's Fees for Research Subjects," *NEJM* 323 (19 July 1990): 194.
4. Maher, "Analysis."

Research and Technology Transfer

Proposal and Award Activity - FY 1994

The table below shows the distribution of proposals submitted and awards received during FY1994 among University colleges. One word of caution, however: *proposals submitted during one fiscal year are generally not awarded until the next year.* Therefore, comparing the

level of proposals submitted in one year to awards received in the same year is not appropriate. For example, the Humhrey Institute submitted 22 proposals but received 24 awards; the proposals for those awards were submitted in a previous year.

UNIVERSITY OF MINNESOTA Proposal and Award Activity — FY 1994 By College

<u>College</u>	<u>Proposals Submitted</u>		<u>Awards Received</u>	
	<u>Number</u>	<u>Amount</u>	<u>Number</u>	<u>Amount</u>
Medical School	1,356	\$201,370,102	862	\$89,251,617
School of Dentistry	66	6,792,160	45	3,952,545
College of Pharmacy	67	7,113,846	46	4,299,774
School of Nursing	50	5,714,511	26	2,417,912
School of Public Health	231	71,563,463	99	21,040,198
College of Veterinary Medicine	118	11,144,437	56	4,300,678
UMD-School of Medicine	48	6,557,363	25	2,242,075
Health Sciences Administration	2	343,701	1	244,454
University Hospital - CUHCC	31	4,197,994	16	2,764,423
Total-Health Sciences	1,969	\$314,797,577	1,176	\$130,513,671
Institute of Technology	822	\$139,649,548	633	\$48,971,160
College of Biological Sciences	218	39,395,153	109	10,518,059
College of Liberal Arts	113	18,827,661	79	9,197,664
College of Architecture & Landscape Architecture	12	813,061	11	534,060
General College	17	2,728,019	4	850,958
Total-Arts, Sciences, Engineering	1,182	\$201,413,442	836	\$70,071,901
College of Agriculture	306	\$39,448,496	212	\$10,304,153
College of Natural Resources	118	11,642,959	75	2,052,911
College of Human Ecology	83	10,587,845	36	2,302,139
Other IAFHE Programs	62	15,038,619	70	3,601,397
Total-IAFHE	569	\$76,717,919	393	\$18,260,600
College of Education	173	\$29,899,440	113	\$11,998,322
UM-Duluth	204	25,230,408	133	6,445,323
VP for Research	70	8,147,292	39	5,360,103
Carlson School of Management	23	3,156,914	18	1,750,714
HHH Institute of Public Affairs	22	5,806,391	24	3,291,150
UM-Morris	41	3,425,674	6	63,748
UM-Crookston	13	2,088,104	6	308,964
Law School	8	1,356,978	1	65,456
Continuing Education & Extension	29	711,919	26	573,275
Other Units	38	15,102,402	22	1,730,091
GRAND TOTAL	4,341	\$687,854,460	2,793	\$250,433,318

Conflict of Interest

(Continued From Page 1)

June 1994 proposal continues a process begun in June 1989, when HHS published its first such proposal for review. The 1994 announcement calls for national review of any final HHS policy one year after it is issued.

The following compares the University of Minnesota conflict of interest policy with the new NSF and HHS policies. For complete texts, see ORTTA's gopher server. The federal policies were published in *59 Federal Register* (28 June 1994), starting page 33,308 for NSF and 33,242 for HHS.

Purpose and Intent of the Policies

All three policies affirm the value of university-industry relations and technology transfer. The University "is committed to fostering the welfare of the State of Minnesota through interaction by the University with other public entities and the private sector." It "assumes that potential for conflicts will occur regularly in the normal conduct of activities," and that "no wrongdoing is implied by the existence of external relationships." NSF "has actively encouraged increased involvement of academic researchers and educators with industry." HHS says that "interaction between PHS-[Public Health Service, part of HHS] funded Institutions conducting research and industry is essential," and "We did not consider any option that would . . . discourage in any way funding grants or contracts to scientists to develop products with significant profit potential." These conflict of interest policies, say the policies, are to prevent any bias such relations might cause in university work.

Potami also emphasized that the conflict policies are not meant to restrict research. "Conflict of interest gets confused with scientific misconduct. But they are not the same, and most scientists do not need a conflict policy. The federal government has realized that people's stock interests and consulting relationships, or those of their families, should not prevent doing business with a company as long as one can show that there is no misuse of public funds—University, state or federal—and that there is proper disclosure and oversight when necessary."

The University's existing conflict of interest policy is the policy called for by the federal documents. The NSF and HHS make individual institutions responsible to establish and enforce their own conflict of interest policies. Those policies must require investigators to disclose to their institutions significant financial interests that would be significantly affected by NSF- or HHS-funded work. They also require institutional policies to provide for review of disclosures, resolution of conflicts, enforcement, and notification to NSF and HHS of unresolved conflicts.

The University policy is the most detailed of the three, and the NSF and HHS both affirm institutions' latitude regarding details. NSF "does not prohibit any particular financial

interest or mandate specific rules for managing conflicts," and it deliberately left some terms undefined "so that institutions would be able to tailor definitions and conflict policies to the particular conditions existing on their campuses." HHS "gives institutions broad discretion in determining how to manage significant financial interests."

Who Must Disclose Their Financial Interests

The University Policy applies to academic employees and anyone who writes and submits grants on behalf of the University. It governs their sponsored research (whether internally or externally funded); technology transfer; instructional, administrative and committee work; consulting and professional referrals; and receipt of work-related gifts. The NSF policy governs the work of individuals "responsible for the design, conduct or reporting of research or educational activities funded or proposed for funding by NSF." The NIH policy governs anyone "at the institution who is responsible for the design, conduct, or reporting of research funded by PHS, or proposed for such funding," and that specifically includes "basic and applied research and product development."

Interests That Require Disclosure

The policies require disclosure of significant financial interests with potential for conflict of interest.

The University says a damaging conflict of interest occurs "when an academic employee compromises his/her professional judgment in carrying out University teaching, research, outreach, or public service because of an external relationship that directly or indirectly affects the financial interest of the academic employee." The NSF and HHS require disclosure of any significant financial interest of an investigator that would "reasonably appear to be directly and significantly affected" by the research or educational activity funded by the NSF or HHS.

The University's thresholds regarding financial interests are more restrictive than those in the federal policies. The University requires disclosure of financial interests held by employees and their immediate families that exceed \$5,000 per year or 1 percent ownership of an enterprise, and of commitments for future royalties, excluding arrangements like mutual funds and pension funds. When members of employees' extended families hold executive positions or more than 10 percent ownership, that also must be disclosed.

NSF and HHS both define significant interests as amounts over \$5,000 or 5 percent ownership, for investigators and their immediate families. HHS specified \$5,000 *per year*, while NSF did not. They do not mention extended families. HHS invited comment on whether \$5,000 and 5 percent ownership are appropriate thresholds.

NSF and HHS also excluded from among significant interests some interests related to the Small Business Innovation

Research Program and the Small Business Technology Transfer Program, and income from public or nonprofit sponsors for seminars, lectures, teaching, advisory committees, or review panels.

The University further defines relationships that do and don't need to be disclosed by listing 16 examples, ranging from those that certainly do not require disclosure, like book royalties and income through medical private practice plans; to those ordinarily allowable following disclosure, like assigning students to design projects in which the employee has a financial interest; to those requiring case-by-case review and special oversight, like clinical trials of a product in which the employee has a financial interest. The policy also points out that employees must obey Minnesota Statute 15.43, "Acceptance of Advantage by State Employee," which bars conflicts of interest in purchasing and contracting for the University.

The HHS particularly requested comment on whether its policy should require disclosure of interests in products or enterprises that will compete with the product under investigation. The University policy does not govern such interests. "In principle, it's a good idea," says Brenner, "but it's too open ended. How do you determine 'competing'?" The HHS also recognizes that problem: "There may not be any reasonable way for an investigator either to identify all competing products or to determine what companies own them," it says.

When and to Whom Disclosures Are Due

The University policy requires disclosure of financial interests to an academic employee's department head when the employee applies for research support, and money will not be made available until review is complete and conflicts are resolved. Disclosure must also be made to appropriate administrators upon receipt of a gift, when serving on a University committee or making administrative decisions, or when transferring technology.

The NSF and HHS policies require investigators and institutions to certify in proposals—probably by checking new boxes on revised forms—that the institutions have adequate policies, that the policies are being followed and enforced, that the required disclosures have been made, and that significant conflicts will be resolved before awards are made. NSF commented that it does not expect "Herculean efforts" by institutions to verify disclosures.

The University and HHS policy also have provisions for disclosure of conflicts in the course of reporting research results. The University requires disclosure of "relevant financial interests to sponsors of research and in reporting by either written or oral communication research results," and when an employee "makes an appearance, either in person or by way of a written communication, before any public body, commission, group, or individual, to present facts or

to give an opinion respecting any issue or matter up for consideration, discussion, or action." The HHS requires such public disclosure when reporting the results of clinical research performed without otherwise proper disclosure and management of a significant financial interest.

All three policies say disclosures need to be updated annually or when an individual acquires a significant new financial interest, and institutions need to keep the related records for three years after awards end.

Review of Disclosures

Regarding review procedures for financial disclosures, NSF and HHS say only that institutions need to designate people to do the job. The University policy details the creation of two committees and two levels of review.

The University's academic vice presidents and vice chancellors are charged with forming one or more Conflict Review Committees (CRCs) for their areas or individual colleges. Thus far, it has been decided there will be two committees for the health sciences and three for arts, sciences and engineering.

CRC members are appointed by academic vice presidents and vice chancellors in consultation with deans. Three-quarters of the voting members will be faculty from a given CRC's college or area; other members will be faculty from outside the given area and representatives from outside the University. Some of the members will have participated in external relationships. ORTTA staff will serve as nonvoting members.

The Public-Private Partnership Committee (PPPC) will be formed by the vice president for research and will include some University people, but mostly a range of representatives from outside the University.

Situations with minimal to moderate potential for conflict of interest, which are ordinarily allowable after disclosure (Category II, Section A of the policy's list of examples), will be reviewed in three steps to be completed in 20 working days:

- Employee discloses financial interest to department head.
- Department head determines course of action and reports to dean.
- Dean approves, or submits disclosure to further review according to the procedure described below.

Situations with moderate to high potential for conflict of interest, for which special oversight is likely required (Category II, Section B of the policy's list of examples) will be reviewed in six to nine steps to be completed in 30 working days, or 60 working days when PPPC review is required:

{Next Page}

Conflict of Interest

(Continued From Previous Page)

- Employee discloses financial interest to department head.
- Department head recommends a course of action and submits it to the dean.
- Dean refers the matter to CRC with or without specific recommendation.
- CRC endorses dean's recommendation or suggests to dean a course of action.
- Dean determines course of action and submits decision to academic vice president or vice chancellor.
- Vice president or vice chancellor concurs, or returns plan to dean for revision, or requests the vice president for research to refer the matter to the PPPC.
 - PPPC advises dean.
 - Dean determines course of action and submits decision to academic vice president or vice chancellor.
 - Vice President or vice chancellor either concurs or returns the plan to dean for revision.

Employees may appeal or ask a dean to reconsider a decision; deans will refer appeals to CRCs and act on their recommendations.

Finally, deans will report annually to vice presidents and vice chancellors regarding reviews and oversight of potential conflicts. Vice presidents and vice chancellors will forward the reports to the vice president for research, who will submit them to the PPPC. The PPPC will review the activities for consistency and suggest modifications of procedures. The vice president for research will communicate the PPPC's recommendations to the vice presidents and vice chancellors, who will communicate them to deans. The vice president for research will also consult with faculty governance committees regarding proposed changes in procedures.

Resolution of Conflicts

All three policies present similar lists of ways to resolve potential conflicts of interest. The University names independent, periodic review; divestiture of the financial interest; modification of the plan of work; and assignment of different employees to control the work. In two identical lists, NSF and HHS suggest public disclosure, independent monitoring, modification of research plans, disqualification from participation in the affected portion of the research, divestiture, or severance of financial relationships.

To its list the University adds, "To the extent possible and reasonable under the circumstances, and in light of the importance of the activity, the review committees and responsible administrators will work with academic employ-

ees to develop means for the activity to take place while protecting the integrity and the reputation of the academic employees and the University."

Waiver of the Requirements

"Academic employees may not engage in activities in which an actual conflict of interest occurs," says the University policy. It allows for waiver of the disclosure requirement, however, when employees can document their lack of influence over research results and dissemination. And in "special circumstances," an academic vice president or vice chancellor may "approve an activity for a limited period of time due to the potentially great benefit from the activity even though there is a high potential for conflict of interest."

The NSF has a similar provision. NSF permits institutions to allow conflicting interests when restrictions would be "ineffective or inequitable," and when negative impacts would be "outweighed by interests of scientific progress, technology transfer, or the public health and welfare."

HHS pointedly disallows such waivers, however. The Public Health Service Act, writes HHS, does not allow waiver of its policy. But the HHS does note that it interprets "management of financial interest" to include an institution's recognizing a potential conflict and monitoring research to ensure that it is not biased. HHS invited comment on the issue.

Enforcement of the Policies

For failing to comply with its policy, says the University, an employee may suffer sanctions including a letter of admonition; ineligibility for grant application, IRB approval, or supervision of graduate students; suspension; nonrenewal of appointment; or dismissal.

NSF is not specific regarding enforcement. It says only that "institutional policy must include adequate enforcement mechanisms, and provide sanctions where appropriate." HHS goes a step further and points out that it could suspend or terminate grants and agreements with those who fail to comply.

NSF and HHS claim the right to review institution records, though they both say they will coordinate such reviews to avoid duplication, and they require institutions to notify them when a potential conflict is not resolved.

Other Provisions

Regarding the financial interests of institutions seeking funding for clinical research, the HHS says it is considering three alternatives, among others: 1) exempting institutional financial interests that would not bias a project, 2) requiring institutions to certify whether they have significant financial interests, or 3) requiring full disclosure to HHS of institutional interests.

(Continued On Page 20)

Seven Additional Interdisciplinary Research Grants Awarded

The Office of the Vice President for Research and Dean of the Graduate School is pleased to announce that seven additional grants for Interdisciplinary Research and Postbaccalaureate Education will be awarded for fiscal year 1995. A total of 13 proposals have now received funding under this new program. Six centers were highlighted in the July issue of *Research Review*.

Grants for up to two years have been awarded for the implementation of new programmatic center activities (up to \$50,000 annually) or for activities that require a planning period (up to \$10,000 annually). It is anticipated that there will be another call for proposals with a December deadline for fiscal year 1996 funding.

Center for Developmental Biology

Anthony Faras, David Hamilton, Ross Johnson, Alfred Michael, Irwin Rubenstein, co-investigators. \$50,000 annually/2 years.

Developmental biology aims to understand the mechanisms that change a single cell, the fertilized egg, into a complex adult organism consisting of billions of cells, organized into patterns characteristic of their species, and with many different specialized functions. This has become a major frontier in the biology of both animals and plants. It has also become a major frontier in more applied areas. Abnormal embryonic development leads to birth defects. Abnormal growth leads to cancer. Understanding the bases of these will lead to significant new understanding, diagnosis and ultimately treatment, of such abnormal conditions. Similarly, understanding plant development is leading to novel advances in crop science.

In this university, we have over thirty faculty members with research interests in development. However, they are scattered among many different departments of the Medical School, College of Biological Sciences and College of Agriculture. The aims of the Center for Developmental Biology are to create and foster interactions between the developmental biologists on both campuses. This will be achieved by regular meetings, as well as an annual symposium and retreat. The Center will serve as a platform for collaborative research grant proposals. It will also act as a forum in the training of graduate students by fostering interactions with faculty in both informal and formal settings and in the generation of collaborative grant proposals for training programs.

Dr. Christopher Wylie, who holds the Harrison Chair of Developmental Biology and Genetics, has been recommended as the first director of the Center.

Center for Neuroscientific Databases

George Wilcox, principal investigator. \$50,000 annually/2 years.

The overall goal of the Center for Neuroscientific Databases is to provide an interdisciplinary environment that facilitates development of a zoomable database of brain structure and function here at the University. The database we envision will be a three-dimensional structure based on brain anatomy defined by magnetic resonance images (MRI) and populated with three-dimensional confocal micrographs. The database user will be able to "fly" through the coarse data and zoom into original fluorescent micrographs localizing several neurochemical markers.

The database will ultimately serve as a peer-reviewed repository for neuroscientific research information broadly accessible over the Internet, in essence serving as an electronic specialty library. The zoomable attribute of the database will allow easy access for student browsers (e.g., a virtual brain model in a distributed classroom) as well as high-powered detailed access by advanced researchers (i.e., a worldwide collaboratory and electronic journal). The Center's goals therefore address teaching, research and outreach missions of the University, potentially improving alignment of research and teaching priorities, and its activities will enhance the visibility of the underlying research programs.

The Center's activities explicitly involve joint studies by computer scientists in the Institute of Technology with neuroscientists, largely in the Medical School. The computer science component capitalizes on existing research groups that are developing database tools for distributed systems, high-performance computing cluster applications and computer vision tools for robotic applications. The neuroscience component is a collaboration involving researchers in the departments of Pharmacology, Physiology, Radiology and Cell Biology and Neuroanatomy.

University-Wide Center on Aging

Ken Hepburn, Harlan Copeland, principal investigators. \$50,000 annually/2 years.

The University-wide Center on Aging (UCA) will draw together an interdisciplinary group of researchers and practitioners to generate research ideas and develop large proposals to conduct applied research in the area of aging. The aging of the population is a key issue shaping the state and national policy agenda well into the next century. Minnesota's current population of people over 65 years of age (12.6 percent of the total) is consistent with the national profile of the aged, and by the middle of the next century nearly a quarter of the state's population will be elderly. Minne-

Graduate School News

sota's elderly are more rural-based than urban (approximately 60 percent), and the state boasts the second-best longevity record in the nation, guaranteeing a sizable group of the frailest elderly (those over age 85).

UCA will organize an interdisciplinary workshop for faculty and advanced graduate students to explore areas that might lead to a program project grant. Potential participants will be drawn from the University's Graduate Minor Program in Gerontology. The group will be convened by Robert L. Kane, M.D., Minnesota Professor of Long-Term Care and Aging.

Likely areas of focus include:

- **Older Persons and Their Families**—how to maintain and strengthen caregiving of frail older persons by their families; how to develop care management infrastructures that support the informal network; how the reformed health care system can guarantee integrated service networks, particularly in rural areas.
- **Cost Effective Interventions for Frail Elderly**—how to manage public expenditures of health and social care for the rapidly growing oldest subpopulation.
- **Successful Aging**—how greater longevity for persons over age 85, by and large women, will pose economic and social opportunities and challenges for American society.

In the first quarter, participants will present seminars to identify areas of common interest within the group. After one quarter, work groups approaching questions from different vantage points will develop pre-proposals defining a set of related research questions and projects. By the third quarter, we will have identified a set of investigators and drafted formal proposals that can be combined into a program project grant scheduled for submission in September or October 1995.

Violence Prevention and Control Initiative

Susan Goodwin Gerberich, principal investigator.
\$10,000 annually/2 years.

Violence involves the intentional use of physical force against another person or against oneself (i.e., homicide, rape, battering, child abuse and suicide), as well as the more covert emotional abuse arising from inequities in power; it occurs across all social strata in various domestic, workplace and social settings. This major public health problem is highly visible not only at the national level, but also in Minnesota. To date, even though numerous efforts to address the problem have been attempted, there is a serious deficiency in relevant research designed to identify specific risk factors and high-risk groups and to serve as the basis

for appropriate decision making in the development of specific programmatic and intervention efforts.

The overall objective of the Violence Prevention and Control Initiative is to facilitate interdisciplinary collaboration in research and programmatic efforts. To accomplish this, faculty members representing the disciplines of public health, epidemiology, law, psychology, sociology, social work, public policy and human ecology, from the Law School, Institute of Child Development, School of Social Work, School of Public Health and Department of Family Social Science will collaborate to 1) identify additional individuals at the University, local-community and state levels with relevant interests and expertise to contribute to these efforts, as appropriate; 2) develop a comprehensive system to identify current violence-related research and programmatic efforts throughout the state, with the potential to monitor the status of these efforts and thus prevent duplication of effort and resources; 3) establish a research agenda that will serve as the basis for collaborative efforts; 4) facilitate the development of collaborative efforts among the participating faculty that can result in funding from external sources; and 5) develop enhanced opportunities for graduate education in violence prevention and control.

This effort involves a unique combination of expertise and experience that is essential to affect, ultimately, the prevention and control of violence. It will enable us to further enhance Minnesota's leadership in the nation where few such comprehensive efforts have been launched.

Center for Advanced Research on Language Acquisition

Dale Lange, principal investigator. \$16,130/1 year.

The mission of the Center for Advanced Research on Language Acquisition (CARLA) is to study multilingualism and multiculturalism and to advance the quality of second-language learning by conducting high-quality research, sharing research-based and other forms of knowledge across disciplines, and extending, exchanging and applying this knowledge in the wider society.

CARLA involves some 25 faculty members from the College of Education and from the College of Liberal Arts in linguistics, languages and literatures, and in second languages. It also employs 13 graduate students representing diverse areas of study in the University.

Currently, CARLA is made up of two parts. The creation of CARLA allows for the successful development of the University of Minnesota as one of six National Language Resource Centers (NLRCs). There are six projects under CARLA's NLRC: the Second Language Assessment Project studies the reliability and validity of existing proficiency-based tests, develops alternative forms of tests and prepares materials for the administration of assessment tools; the Uni-

Graduate School News

versity and Elementary Immersion Project performs research and develops curriculum in Spanish, French and German Immersion classes for all levels of education; Second Language Learning Strategies develops model workshops for teachers and learners of foreign languages and researches teacher use of language learning strategies; Technology and Second Language Learning collects, assembles and disseminates information on technological aids available to teachers and students in a variety of foreign languages; Less Commonly Taught Languages is preparing a national electronic network which will link elementary, secondary and post-secondary teachers across the country in order to foster closer cooperation in the development of pedagogical strategies materials and assessment tools; the Intercultural Studies Project is creating a theoretical framework for integrating culture as the focus for foreign language teaching and materials.

CARLA also houses the Articulation Project, a three-year project for better articulation of language instruction and learning between and among primary/secondary (P-12) and college/university systems in Minnesota.

The establishment of CARLA represents the culmination of more than two decades of interdisciplinary cooperation and pioneering work in second-language assessment at the University of Minnesota and across the state.

Refugee Studies Center

Daniel Detzner, principal investigator. \$10,000 annually/2 years.

The situation confronting refugees is an unprecedented international problem with more than 18 million persons fleeing their homelands and another 25 million internally displaced persons. The University of Minnesota is uniquely situated to take leadership in the interdisciplinary study of refugees, because a naturally occurring research environment is not only at our doorsteps, but right here within the University itself. Since the early 1980s, faculty and graduate students from several departments have developed a research collection within the Center for Urban and Regional Affairs (CURA) that is focused on Southeast Asian refugee populations. The Southeast Asian Refugee Studies project (SARS) currently houses more than 4,000 documents, a computer-based key-word-accessible, annotated bibliography and a quarterly newsletter distributed to more than 2,000 persons around the world.

The proposed Refugee Studies Center seeks to build on the unique resources of SARS by initiating new research activities that will draw together multidisciplinary groups of University of Minnesota faculty and graduate students for collaborative research initiatives on Southeast Asian or other world refugee populations and issues. With a new organizational home in the Institute for International Studies and Programs (IISP), the continuing interest of CURA and

the resources of SARS, the two-year planning period will be used to link scholars, students, service providers and policy makers around mutual research interests.

The planning effort involves twenty-two faculty members from sixteen departments and units at the University of Minnesota, including Anthropology; Community-University Health Care Clinic; Design, Housing and Apparel; Epidemiology; Family Practice and Community Health; Family Social Science; History; Institute of Linguistics and Asian and Slavic Languages and Literatures; Immigration History Research Center; Nursing; Nurse Midwifery; Pediatrics; Pediatrics and Child and Maternal Health; Psychiatry; Social Work; and Sociology.

The overall objective of the proposed Center is to promote international research collaboration between faculty, students and others interested in Southeast Asian and refugee studies. This objective will be pursued through a series of initiatives designed to promote interdisciplinary research, resource development and outreach. The new initiatives include a seminar series, seed grants, an international conference and collaborative proposals.

Interdisciplinary Outcomes Research on Transplantation: Studies of the Clinical, Quality of Life, and Cost Outcomes of Lung Transplant Patients

Cynthia Gross, principal investigator.
\$10,000 year 1, \$4,200 year 2.

The Interdisciplinary Outcomes Research on Transplantation program was created to establish a team of University of Minnesota faculty to collaborate on studies of the clinical, quality of life, and cost outcomes of lung transplant patients. The University of Minnesota is one of the most active clinical and research centers for lung transplantation, a new, life-saving, but costly, therapy for persons with end-stage lung diseases. The program investigators are faculty in the Medical School, Divisions of Cardiothoracic Surgery (Drs. Bolman and Kshetry) and Pulmonary Medicine (Dr. Hertz); School of Public Health, Divisions of Biostatistics (Dr. Connett) and Health Services Research (Dr. Manning); and School of Nursing and College of Pharmacy (Dr. Gross). These investigators will be working together to develop study protocols that reflect their combined expertise and experience in the areas of surgical and medical aspects of lung transplantation, multi-centered clinical trials management, measurement of quality of life, statistical analysis of lung disorder data and analysis of health care costs. With the support of this planning grant, these investigators will be preparing NIH grant proposals for a Statistical and Data Management Center and for a Clinical Center at the University of Minnesota for the newly created Lung Transplant Study Group, a consortium of ten major lung transplant centers from the United States and Canada.

■ C.S. Fund

The C.S. Fund makes grants to programs that demonstrate national or international impact and that lead directly to changes in policy or practice. The C.S. Fund makes the majority of its grants in two categories: dissent and the environment. Within each of these broad categories the foundation has particular areas of interest.

Environment

The foundation's environmental funding aims to encourage biological diversity and to eliminate toxins at their source. While the potential extinction of wild species is now widely recognized as a problem, a corresponding crisis—the disappearance of domestic species—goes largely unnoticed. The tremendous plant and animal diversity that once existed is rapidly diminishing and once lost can never be recreated. Similarly, once polluted, air, water and soil can never be completely restored. Specific goals of the environmental category are:

- Conserving the rich diversity of food crop and livestock germplasm;
- Preventing the irreversible alteration of the earth's genetic legacy;
- Reducing or eliminating the production of toxic materials;
- Assessing the total burden of toxins on the biosphere and acting to reduce that burden.

Dissent

To make meaningful contributions to society, citizens must have the freedom to express their opinions and act on their convictions. The specific goals of the dissent category are:

- Protecting the right to dissent and hold divergent opinions;
- Preserving society's right to hold accountable all of its institutions and officials, both public and private;
- Preventing human rights violations and civil rights limitations.

The C.S. Fund prefers that requests for support be made by written proposal. Since fund raising is both time consuming and labor intensive, the foundation encourages grant seekers to send materials prepared for other foundations; for purposes of initial screening it is not necessary to send a specially written proposal. All proposals should include a budget. Additional documents may be requested. The average grant size is \$15,000.

Upcoming deadlines are **December 15, 1994**, and **April 17, August 15 and December 15, 1995**. A copy of the brochure is available from ORTTA and may be requested by calling 624-9004 or by sending a note to go-pher@ortta.umn.edu. Send proposals to the C.S. Fund, 469 Bohemian Highway, Freestone, CA 95472; 707/874-2942, fax 707/874-1734.

■ General Service Foundation

The General Service Foundation (GSF) provides grants for projects that support reproductive health, natural resource use and international peace.

Reproductive Health Care

GSF aims to shape policy at the national and state levels to guarantee women a full range of reproductive health care services in the United States and Latin America. To that end, the foundation supports research for policy analysis, litigation, public education and advocacy.

GSF funds U.S. projects that address rapid population growth and unintended pregnancies, through family planning information and services, contraceptive development and reproductive health care.

Natural Resources

GSF funds initiatives that develop conservation and sustainable use of natural resources, giving priority to projects that promote community involvement. The emphasis is on projects that consider the biodiversity of natural resources rather than those considering only the relationship between humans and the environment.

International Peace

GSF's international peace program promotes stable communities, primarily in Mexico, Central America and the Caribbean; supports civil rights, international relations and economic and environmental development; develops collaboration among nongovernmental groups, and strengthens interregional organizations.

Grants range from \$1,000 to \$45,000 and average \$20,000. Funding is split equally among the three focus areas. GSF funds U.S. nonprofits, with special consideration for those partnering with organizations abroad.

Annual deadlines are **February 1** and **September 1**. For further information contact Robert Musser, President, General Service Foundation, 411 East Main Street, Suite 205, Aspen, CO 81611-2953; 303/920-6834; fax 303/920-4578.

■ American Cancer Society Institutional Research Grant

The stated goal of the American Cancer Society (ACS) is to "foster meritorious research on cancer that cannot be supported through other available types of support." The purpose of the University of Minnesota Institutional Research Grant is to serve as "seed" money to permit the initiation of promising new projects or novel ideas by junior faculty investigators.

The University of Minnesota Institutional Research Grant has been restructured considerably. The amount of the award has been increased to \$15,000 direct costs. The awardee must be an assistant professor or instructor *on faculty*. Applicants may not have previously received an ACS Institutional Research Grant nor have current national funding, although recipients of career development awards from NIH (K04, K08), or ACS (Junior Faculty Awards), or awards from the Leukemia Society are eligible.

Cancer-related research may include analysis of developmental biology, gene regulation, or alteration of intracellular or extracellular processes which may lead to an improved understanding and/or therapy of potential or actual oncogenic events in prokaryotic or eukaryotic cells.

The deadline for receipt of applications is **October 1, 1994**. Instructions and application forms are available from the Pediatric Oncology Office, 421 Masonic Cancer Center, 626-1926.

■ American Cancer Society Metastatic Malignant Melanoma

The American Cancer Society (ACS) has recently received a major gift to support research on metastatic malignant melanoma. ACS is requesting research proposals that are clearly relevant to, and will enhance understanding of, metastatic malignant melanoma. The granting program encompasses a broad area of research related to this problem and investigators working in the appropriate scientific disciplines are encouraged to apply.

The research may be basic, preclinical or clinical, including quality of life and other psychosocial and behavioral projects with direct relevance to the problem of metastatic melanoma.

ACS is prepared to support two projects for a maximum annual direct cost of \$125,000 each, for two years. Renewals may be submitted to the Society's regular grant program if the investigator so chooses.

The application deadline is **October 15, 1994**. Prospective applicants can receive specially marked application materials by faxing a request for these forms to Ms. Aida Bernald at 404/321-4669.

■ American Heart Association, Minnesota Affiliate

Grants-In-Aid

The Minnesota Affiliate of the American Heart Association announces its grants for fall 1994.

Grants-in-Aid: Standard — Awards are available to post-doctoral investigators pursuing independent research and are primarily intended to adequately fund high-quality cardiovascular research and to provide "seed" money to obtain preliminary results on innovative projects. Awards cover the expenses necessary to conduct research such as salaries of technical and clerical personnel, and cost of supplies and equipment. Support is available for all basic disciplines such as physiology, biochemistry, and pathology, as well as for epidemiological and clinical investigations which bear on cardiovascular problems, including stroke. The maximum award is \$24,000; the application deadline is **December 15**.

Grants-in-Aid: Beginning — Awards are available for research to post-doctoral investigators in the early phase of their research careers in the cardiovascular field and related problems in the clinical basic sciences, or to investigators changing fields. The maximum award is \$24,000; the application deadline is **December 15**.

Research Fellowships — Awards are available for research to post-doctoral investigators in the early phase of their careers in the cardiovascular field and in related problems in the clinical basic sciences. The first year stipend is \$24,000, the second is \$26,000, each with an additional discretionary amount of \$4,000. The application deadline is **December 15**.

For more information contact the American Heart Association, Minnesota Affiliate, 4701 West 77th Street, Minneapolis, MN 55435; 612/835-3300.

■ German Marshall Fund

The German Marshall Fund of the United States was established as an independent American foundation by a gift from the Federal Republic of Germany. The gift was made as a memorial to the Marshall Plan, the American aid program which helped Europe rebuild after World War II. Underlying the gift was the belief that by cooperating and making full use of their interdependence, the United States and the nations of Europe could contribute significantly to world peace and to the growth of the international economy.

The gift was extraordinarily generous in three ways. First, it involved a great deal of money; second, it mandated a focus on relations between the United States and *all* of Europe, not just Germany; and third, no strings were attached. Fund decisions are made by an American board of trustees.

The four program areas of the Fund are:

- Fostering U.S.-European cooperation after the Cold War;
- Exploring changing U.S.-European economic roles;
- Building U.S.-European environmental partnerships;
- Supporting reform in Central and Eastern Europe.

The fund primarily makes grants to individuals and organizations. It also conducts its own fellowship programs. Except for work in Central and Eastern Europe, three policies guide the Fund's grantmaking.

- Projects must address issues important both to nations in Europe and to the United States. They must involve people or institutions on both sides of the Atlantic.
- Projects must normally include transnational comparisons and transfer of experience and innovations, preferably involving practitioners or policymakers.
- Projects must include a plan for dissemination and "marketing" their ideas and results. The Fund emphasizes stimulating policy debate.

Applications for grants are considered **throughout the year**. Individuals and institutions seeking support from the fund should send a brief proposal, in English, outlining the project's:

- Purpose and importance;
- Link to U.S.-European relations;
- Budget;
- Other potential funding sources;

- Qualifications of the applicant (c.v. or résumé for individuals, general brochures or annual reports for institutions); and
- Plans for dissemination or follow up.

A copy of the brochure describing policies and procedures in more detail, and listing all available fellowships, is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Contact the German Marshall Fund at 11 Dupont Circle NW, Suite 750, Washington, DC 20036; 202/745-3950, fax 202/265-1662.

■ Literacy Support

As first lady, Barbara Bush highlighted the problem of illiteracy in the United States. She continues to focus on it through her Barbara Bush Foundation for Family Literacy, as do a number of funders that have made literacy one of their giving priorities.

Eaton Corporation Foundation.

Supports literacy initiatives as part of its focus on project-oriented support, in education and community improvement, specifically encouraging literacy, economics education and general education initiatives.

Grants typically range from \$1,000 to \$25,000; there is **no application deadline**. Contact Fred Unger, Director of Community Affairs, Eaton Corporation, Eaton Center, Cleveland OH 44114-2584; 216/523-4821.

Coca-Cola Foundation

Funds projects that improve literacy among adults and children as part of its overall funding of education projects. The Foundation grants support projects in adult basic education, workplace literacy, English as a second language and inter-generational literacy.

There is **no deadline**. Applicants should submit a proposal of no more than two pages describing the project and explaining why Coca-Cola is the appropriate funder. The letter should include a document stating the organization's mission and financial condition and providing proof of tax-exempt status. Contact Don Greene, President, Coca-Cola Foundation, PO Drawer 1734, Atlanta, GA 30301; 404/676-2568.

William H. Donner Foundation

Funds projects, under its Human Capital Development Program, in functional literacy designed to make people more independent. The Foundation prefers projects that target the

(Next Page)

homeless, inmates, the working poor, teen parents, youths at risk of becoming dropouts, the disabled and the treatable mentally ill.

Deadlines are **March 1, July 1 and October 15** annually. Applicants should send a brief letter of inquiry describing the project, its objectives, listing personnel involved and the amount of foundation support requested. Contact William Alpert, Senior Program Officer, William H. Donner Foundation, 500 Fifth Ave, Suite 1230, New York, NY 10110; 212/719-9290.

Pillsbury Company Foundation

Supports direct-service programs and school-to-work transition projects for disadvantaged youths, with a focus on empowering them to self-sufficiency through access to education and employment opportunities.

The deadline for education grants is **early January 1995**. Applicants should call for an application, Contact Michael Bongo, Director of Community Relations, Pillsbury Company Foundation, 200 South Sixth Street, Mail Stop 37X5, Minneapolis, MN 55402; 612/330-2347.

Robert Wood Johnson Foundation

Smoke-Free Families: Innovations to Stop Smoking During and Beyond Pregnancy

The Robert Wood Johnson Foundation's new program, Smoke-Free Families: Innovations to Stop Smoking During and Beyond Pregnancy, is intended to reduce rates of smoking in America's families by targeting women of childbearing age before, during and after pregnancy. By developing new interventions and investigating new uses of existing ones in health care and other community settings, the goal is to increase the number of women who quit smoking and who remain smoke free.

Researchers are challenged to develop the next generation of smoking cessation interventions for women of reproductive age. Projects supported will either investigate promising new technologies, such as passive dosimeters and videodiscs, or explore new and unusual applications of existing technologies, such as electronic tracking of women across preconception, prenatal and postpartum settings. Interventions may extend to other household members as well.

To be considered favorably, proposals must demonstrate that the approach differs substantially from current practice, has the potential to increase the number of childbearing women who quit smoking and stay smoke free, and is inexpensive enough to be incorporated easily and widely into routine care. Preference will be given to proposals that:

- Are innovative, that is, advance the state of the art;
- Employ an appropriate research design;
- Use interventions tailored to the smoker's readiness for change;
- Include biochemical tests to verify smoking cessation outcomes;
- Assess the feasibility, acceptability and cost of the intervention, including the resources to implement it; and
- Examine the synergistic effects of combining patient-centered approaches with provider/administrative strategies.

Approximately \$3 million will be awarded for up to 15 two-year pilot projects.

A letter of intent is due **October 24, 1994**. The deadline for full proposals is **February 15, 1995**. A copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher @ortta.umn.edu. For further information contact H. Pennington Whiteside, Jr., Deputy Director, Smoke-Free Families, Obstetrics and Gynecology, University of Alabama, Birmingham, AL 35233-7333; 205/975-8951.

Minnesota Humanities Commission

Scholar Grants

Scholars conducting humanities research for public audiences will be eligible for MHC grants in 1995. The "Works in Progress" grant program will provide at least ten grants of up to \$2,000 each.

MHC supports and promotes the public humanities in Minnesota. MHC scholar grants are intended to encourage scholars not only to pursue specialized research, but also to consider how their research can benefit the public and community cultural organizations. The grants will be available to scholars whose work will result not only in scholarly publication but will also reach the public through newspaper features, articles for the popular press, exhibits, media productions or other means.

Funding can be used for expenses related to research, including sabbatical support, student workers, travel and secretarial assistance. Grants cannot be used for purchase of equipment.

MHC will accept "Works in Progress" grant applications from **January 1995 until March 31, 1995**. Awards will be made in early June. For further information contact the Minnesota Humanities Commission, 26 East Exchange Street, Lower Level North, St. Paul, MN 55101; 612/224-5739.

■ NIDCD

Mechanisms Underlying Sign Language Acquisition and Use

PA-94-091
Understanding the mechanisms by which deaf and hearing individuals acquire and use a manual communication system is limited. Research is needed to determine optimal conditions for such learning and prerequisite abilities for successful acquisition and use of a manual system, as well as the interindividual variations of acquisition of manual communication. The National Institute on Deafness and Other Communication Disorders (NIDCD) is requesting applications for the support of studies of the sensory, perceptual, cognitive, neural and molecular mechanisms underlying acquisition and use of a signed language.

Research will be conducted in the areas of 1) acquisition and processing of signed languages; 2) cognitive, perceptual and motor processes, and psychosocial issues related to sign language acquisition and use; and 3) neural underpinnings of sign language acquisition and use. Specific examples of research include, but are not limited to:

- The acquisition of American Sign Language (ASL) or other signing systems in children exposed to these languages from birth as well as in children whose access to a first natural language is delayed or incomplete;
- The relation between cognitive and psychosocial development and the acquisition of ASL in deaf children of deaf parents and in deaf children of hearing parents;
- The relation of infants' early acquisition of sign language phonology, assessed through tests of sign perception, to the acquisition of other levels of a signed language, such as the acquisition of signs (lexicon), sign meanings (semantics) and grammatical constructions (syntax);
- The underlying perceptual and motor processes in sign language, for example, basic and higher-level processes underlying the perception and use of space, form and movement in sign language;
- The specialization of the cerebral hemispheres for language and other types of cognitive processing in the deaf, including ways in which the neural organization and function of the basic sensory systems may be changed by deafness and/or by acquisition of sign language.

The mechanisms of support for grants under this program will be the individual, investigator-initiated research project grant (R01) and the FIRST (R29) award.

This is an ongoing program with annual deadlines of **February 1, June 1 and October 1**. A complete copy of the

announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Judith A. Cooper, Ph.D., NIDCD, Executive Plaza South, Room 400-C, 6120 Executive Boulevard, Rockville, MD 20892; 301/496-5061, fax 301/402-6251.

■ National Science Foundation

Macromolecular Structure Database

The Biological Sciences Directorate, National Science Foundation (NSF), announces a special competition for proposals that describe the establishment, maintenance and distribution of a Macromolecular Structure Database (MSD). The MSD will serve as a primary repository for the three-dimensional Cartesian coordinates and related information, including structure factors for those biological macromolecules and macromolecular assemblies whose structures have been determined to atomic resolution. Other federal agencies benefitting from such a database will help sponsor the program, i.e., Department of Energy, the Office of Health and Environmental Research (OHER), and the National Library of Medicine.

The MSD is expected to serve as a repository for data generated through x-ray scattering and nuclear magnetic resonance (NMR) studies of proteins and nucleic acids. Proposals submitted in response to this announcement must discuss the structure of the proposed database, including the format of data entries, and provide detailed plans for long-term management and distribution of the database.

Consortia of eligible individuals or organizations may apply but a single individual or organization must accept overall management responsibility.

NSF intends to make an initial five-year award using a cooperative agreement between the agency and the awardee. The exact amount of the award is not set, but the overall budget, including contributions by all participating awarding agencies and including indirect costs, is expected to be in the range of \$1 million to \$2 million per year, with additional funds for equipment purchase if needed.

The application deadline is **January 23, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Gerald Selzer, Division of Biological Instrumentation and Resources, NSF, 4201 Wilson Boulevard Room 615, Arlington, VA 22230; 703/306-1469, fax 703/306-0356, internet gselzer@nsf.gov.

■ National Science Foundation

Faculty Early Career Development Program

The National Science Foundation (NSF) strongly encourages the early development of academic faculty as both educators and researchers. The Faculty Early Career Development (CAREER) Program is a Foundation-wide award instrument for the support of junior faculty within the context of their overall career development. It combines in a single program the support of quality research and education in the broadest sense and the full participation of those traditionally underrepresented in science and engineering.

Junior faculty who intend to develop academic careers involving both research and education may apply. To be eligible applicants must meet all of the following:

- Be employed at an institution in the U.S. which awards a baccalaureate or advanced degrees in a field supported by NSF;
- Be in their initial full-time tenure-track or equivalent academic appointment and within the first four years of that appointment at the program application deadline;
- Not hold or have held tenure on or before the program application deadline;
- Not be a current or former recipient of a Presidential or NSF Young Investigator or Presidential Faculty Fellow award. Prior or concurrent federal support for other types of awards or for nonduplicative research does not preclude eligibility.

The duration of awards is at least three but not more than five years. Funding level will be consistent with the scope of the project and NSF directorate and disciplinary practices. The intent is to provide stable support at a sufficient level and duration to enable awardees to achieve the balanced education and research career development objectives of the program.

CAREER proposals must be submitted in accordance with the target dates or deadlines of the appropriate disciplinary program.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ National Science Foundation

Cost-Reducing Health Care Technologies

The National Science Foundation (NSF) and the Whitaker Foundation (WF) have announced a jointly funded research program entitled, "Cost-Reducing Health Care Technologies." The goal of this undertaking is to produce innovative, multidisciplinary research that can contribute to the reduction of health care costs without compromising quality, effectiveness or accessibility of the health care system. The focus will be on new or improved technologies that can reduce the cost of existing procedures or technologies in the delivery of health care.

Examples of research areas and topics of interest include, but are not limited to:

- Research to develop new or improved technologies that are less expensive than existing technologies;
- Research to increase productivity and reduce costs in the hospital environment;
- Research to develop new technologies to enable the delivery of health care outside the hospital environment such as in the patient's home, nursing homes and clinics;
- Research to develop new techniques, technologies, systems and procedures for low-cost diagnosis and treatment;
- Research to identify and develop materials for implants and external medical devices that will decrease the cost of the devices or increase device longevity;
- Research to increase patient independence by developing low-cost, novel means of self-diagnosis and self-therapy, when appropriate;
- Research to develop new information and communication systems to provide efficient access to data needed for the low-cost delivery of health care.

Proposals must include a section on the anticipated cost reduction. This section must be substantive and include a quantitative analysis of the anticipated cost savings using realistic assumptions.

U.S. academic institutions and nonprofit organizations with academically oriented engineering and science research and education programs are invited to submit proposals. Projects that include collaboration with other institutions such as industrial organizations, foundations and/or regional, state and federal agencies are encouraged.

{Next Page}

Individual awards will typically range from \$100,000 to \$250,000 per year for up to three years.

A concept paper, no longer than three pages, is due no later than **October 3, 1994**. Guidelines for the preparation of the concept paper are in the announcement. Applicants will be notified if a formal proposal is to be submitted.

Formal proposals are due **January 30, 1995**. Contact personnel are listed in the announcement. A complete copy of the announcement (NSF 94-99) is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ U.S. Department of Education Patricia Roberts Harris Fellowship Program

The purpose of the Patricia Roberts Harris Fellowship Program is to provide, through institutions of higher education, grants to assist in making available the benefits of master's, professional and doctoral education programs to women and individuals from minority groups who are underrepresented in these programs.

The master's and professional program is divided into two parts. The first gives absolute preference to areas of high national priority: Business Administration and Management/Accounting; Biological and Life Sciences; Computer Science; Engineering; Health Sciences; and Visual and Performing Arts. The second part is for study fellowships in other areas.

Approximately 45 awards will be made averaging \$140,735. Individual stipends will be a maximum of \$14,400.

The doctoral program is also divided into two parts. The first gives absolute preference to areas of high national priority: Biological and Life Sciences; Business Administration and Management; Clinical Psychology; Computer Science; English/American Literature and Language; Engineering; Mathematics; Physical Sciences; and Visual and Performing Arts. The second part is for doctoral study in other areas.

Approximately 78 awards will be made averaging \$130,942. Individual stipends will be a maximum of \$14,400.

The application deadline for both awards is **October 14, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Cosette Ryan, U.S. Department of Education, 400 Maryland Avenue SW, Portals Building, Suite C80, Washington, DC 20202-5329; 202/260-3608.

Grantsmanship for Beginners

On Wednesday, September 21, and again on Friday, December 9, 1994, the Minnesota Council on Foundations is offering a class entitled *Grantsmanship for Beginners* to be held at the Earle Brown Center on the St. Paul Campus.

This is a class designed to help beginning grantwriters in their fundraising efforts. Participants will get tips on researching the best sources for grants, will learn the "how-to's" on writing grant proposals from experienced grantwriters, and will hear from granting agencies on the elements they consider important in successful grant proposals. The information to be presented is very basic, and although federal funding will be mentioned, the general emphasis will be on obtaining private funding.

The fee for the class is \$40, which includes lunch, refreshments, program materials and related costs. Participants are encouraged to register early; classes are filled on a first-come, first-served basis and fill quickly. All registrations will be confirmed by mail. Only two participants per department or school will be accepted from the University.

Photocopies of the brochure, including registration forms, are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Minnesota Council on Foundations, 800 Baker Building, 706 Second Avenue South, Minneapolis, MN 55402-3008; 612/338-1989.

Conflict of Interest

(Continued From Page 10)

NSF estimates that 23 percent of investigators will have financial interests to disclose, and that compliance with the NSF policy will take investigators an hour when they have something to disclose, 20 minutes when they do not. HHS says it expects compliance with its policy will require less than \$1,000 in staff time at any one institution.

Despite differences in details of their policies, NSF and HHS say that they worked together to write consistent policies and that they are working with other federal agencies on a single federal policy that "will ensure consistent treatment of investigator conflicts issues at all federal funding agencies."

By Phil Norcross

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
July 1994	208	\$ 37,539,073
Awards Processed		
July 1994	224	24,552,166
Proposals Submitted		
July 1993	281	58,689,658
Awards Processed		
July 1993	225	21,282,421

Evaluation of Medicated Early Weaning (MEW) and Partial Depopulation (PD) to Establish High-health Swine Farms

Carlos Pijoan, Clinical and Population Sciences
 Han S. Joo, Clinical and Population Sciences
 Martha A. Melencamp, Clinical and Population Sciences
 Minnesota Pork Producers Association
 \$27,700 - 05/01/94-04/30/95

Making Decisions about Long-term Care

Paul D. Thuras, Institute for Health Services Research
 Brookdale Foundation
 \$60,728 - 07/01/94-06/30/95

Elderly Nutrition Program Evaluation

I. M. Buzzard, Epidemiology
 Mathematica Policy Research, Inc.
 \$115,000 - 12/01/93-01/30/95

Craftworkers Mortality Study — 3M Company

Jack S. Mandel, Environmental and Occupational Health
 3M Company
 \$72,812 - 01/01/94-06/30/95

Family Nutrition Education Program

Marilyn A. Johnson, Human Ecology, MN Extension Service
 St of MN, Department of Human Services
 \$1,999,267 - 10/01/93-09/30/94

Oral Rapamycin and Cyclosporine A in Porcine Renal Allograft Model

Arthur Matas, Surgery
 Wyeth-Ayerst Research
 \$359,132 - 10/01/93-07/01/94

A Placebo-controlled Study Assessing Safety and Relative Efficacy of High-dose Nicoderm

Dorothy Hatsukami, Psychiatry
 Alza Corporation
 \$160,720 - 05/12/94-06/01/95

Epidemiologic Study of Cystic Fibrosis: Monitoring Pulmonary Function, Pulmonary Exacerbation and the Safety of Long-term Treatment with Pulmyzyme®

Warren E. Regelman, Pediatrics
 Genentech, Inc.
 \$129,500 - 01/01/94-12/31/94

A Double-blind, Parallel, Placebo-controlled, Multiple-Dose, 6-month Study Assessing the Safety and Efficacy of Daily Subcutaneous Injections of Recombinant Human Ciliary Neurotrophic Factor in Patients with Amyotrophic Lateral Sclerosis

Gareth Parry, Neurology
 Syntex Research, Inc.
 \$167,076 - 10/30/93-11/30/94

A Randomized, Double-blind, Placebo-controlled Study of the Effect of Cilostazol in Patients with Intermittent Claudication Secondary to Peripheral Vascular Disease on Walking Distances and Plasma Lipids

Donald B. Hunninghake, Pharmacology
 Otsuka America Pharmaceutical, Inc.
 \$96,300 - 02/01/94-01/31/95

The Mechanism of Switching from an Acidogenic to a Butanol-acetone Fermentation by Clostridium Acetobutylicum

Palmer Rogers, Microbiology
 U.S. Department of Energy
 \$188,180 - 04/15/94-04/14/96

Pion and Proton Nucleus Interactions at Intermediate Energy

Dietrich K. Dehnhard, Physics and Astronomy
 U.S. Department of Energy
 \$215,000 - 06/01/94-05/31/95

A Three-dimensional, Time-dependent Model of the Interaction of Magnetosphere-Ionosphere Coupling on Intermediate and Small Scales in the Auroral Zone

Robert Lysak, Physics and Astronomy
 NASA
 \$64,232 - 05/01/94-04/30/95

Crack-induced Failures in Plastic Pack

Avram Bar-Cohen, Mechanical Engineering
 Bell Northern Research, Ltd.
 \$84,000 - 04/01/94-03/31/95

Optimizing the Turbo-rotor-compound Engine

John Abraham, Mechanical Engineering
 Los Alamos National Laboratory
 \$69,265 - 11/01/93-09/30/94

Heat/Mass Transfer Enhancement in Separated and Vortex Flows

Richard J. Goldstein, Mechanical Engineering
 U.S. Department of Energy
 \$126,100 - 04/01/94-03/31/95

Foliated Metric Rigidity Theory

Scot Adams, Mathematics
 National Science Foundation
 \$32,770 - 06/15/94-11/30/96

Partial Differential Equations: Free Boundary Problems

Avner Friedman, Institute for Mathematics and Its Applications
 National Science Foundation
 \$65,000 - 05/01/94-10/31/97

Gas Chemistry and Kinetics of Serpentinization Processes

Michael E. Berndt, Geology and Geophysics
 National Science Foundation
 \$68,000 - 05/15/94-04/30/95

A Cooperative Optoelectronics Laboratory Course Between University and Industry

James R. Leger, Electrical Engineering
 National Science Foundation
 \$50,870 - 06/01/94-05/31/96

Epitaxial Metallizations for III-N Semiconductors

Philip I. Cohen, Electrical Engineering
 USDOD, Air Force
 \$131,610 - 06/16/94-06/29/97

Traffic Data Management for Advanced Driver Information Systems

Shashi Shekhar, Computer Science
 St of MN, Department of Transportation
 \$43,000 - 03/21/94-03/31/95

Robust Preconditioned Iterative Techniques for Computational Fluid Dynamics (CFD) Applications

Youcef Saad, Computer Science

NASA
\$90,124 - 07/01/94-06/30/95

Development and Application of On-line Strategies for Optimal Intersection Control

Yorgos J. Stephanedes, Civil and Mineral Engineering
St of MN, Department of Transportation
\$165,000 - 03/28/94-03/31/96

Control of Nonlinear Differential Algebraic Equation Systems

Prodrimos Daoutidis, Chemical Engineering and Materials Science
National Science Foundation
\$45,651 - 03/15/94-08/31/95

Particle Acceleration and Dynamics of Supernova Remnants and Radio Galaxies

Thomas W. Jones, Astronomy
Lawrence Rudnick, Astronomy
National Science Foundation
\$117,010 - 05/15/94-10/31/95

A Scalable Library for Computational Fluid Dynamics

Paul R. Woodward, Astronomy
U.S. Department of Energy
\$194,000 - 05/15/94-05/14/95

Refugee Social Adjustment/Mental Health Services

Amos S. Deinard, Community-University Health Care Center
St of MN, Department of Human Services
\$77,000 - 07/01/94-06/30/95

Genetics of Host and Microbe Affecting Competition for Nodulation of Soybean

Michael J. Sadowsky, Soil Science
James H. Orf, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$25,425 - 05/01/94-04/30/95

Effective Water and Nitrogen Management for Southeast Minnesota

John Moncrief, Soil Science
Legislative Commission on Minnesota Resources
\$338,000 - 07/01/93-06/30/95

Managing Agricultural Environments of North-central Minnesota Sandy Soils

H. H. Cheng, Soil Science
Legislative Commission on Minnesota Resources
\$400,000 - 07/01/93-06/30/95

Developing Cyst Nematode Resistant Soybeans

Nevin D. Young, Plant Pathology
James H. Orf, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$92,000 - 05/01/94-04/30/95

Comparison of Transcription from Soybean Protein Genes

Burle G. Gengenbach, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$36,956 - 05/01/94-04/30/95

Development of a Biological Weed Control for Soybean

Donald L. Wyse, Agronomy and Plant Genetics
David R. Johnson, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$27,700 - 05/01/94-04/30/95

Soybean Breeding and Genetics Support

James H. Orf, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$66,500 - 05/01/94-04/30/95

Recreation Management Short Course

David Lime, Forest Resources
St of MN, Department of Natural Resources
\$31,800 - 02/27/94-06/30/94

Democracy, Leadership and Health Care

Lawrence Jacobs, Political Science
Robert Wood Johnson Foundation
\$250,000 - 07/01/94-06/30/96

Lighted Guidance Devices: Intelligent Work Zone Traffic Control Highways

Max Verduyssen, Kinesiology/Leisure Studies
St of MN, Department of Transportation
\$62,000 - 03/31/94-01/31/95

Interaction of Non-driving Tasks with Driving

Stirling P. Stackhouse, Kinesiology/Leisure Studies
St of MN, Department of Transportation
\$25,000 - 03/31/94-12/31/94

A National Assessment of Education Programs Data Reporting Program Utilizing Profile Analysis Via Multidimensional Scaling

Mark L. Davison, Educational Psychology
Ernest Davenport, Educational Psychology
U.S. Department of Education
\$114,768 - 05/01/94-02/28/96

Fate and Transport of Atrazine and Metabolites in Great Lakes

Steven J. Eisenreich, Gray Freshwater Biological Institute
Environmental Protection Agency
\$73,606 - 04/22/94-12/31/95

Hydrological Impacts of Wetland Management in Headwaters

Tatiana Nawrocki, Natural Resources Research Institute, Duluth
National Science Foundation
\$18,000 - 06/01/94-05/31/95

Incorporating Hazardous Waste Processing in Unit Operations

Dorab N. Baria, Science and Engineering, Duluth
National Science Foundation
\$19,315 - 07/01/94-06/30/96

Organic Matter Processing by Filter Feeders in Stream Ecosystems

Anne E. Hershey, Biology, Duluth
Randall E. Hicks, Biology, Duluth
National Science Foundation
\$200,000 - 07/01/94-06/30/96

The Endothelium and Vascular Compliance

Alan J. Bank, Medicine
Robert F. Wilson, Medicine
American Heart Association, MN Affiliate
\$24,000 - 07/01/94-06/30/95

Acquisition of a Workstation for Research in High-Performance Computing

Ahmed Sameh, Computer Science
Mostafa Kaveh, Electrical Engineering
National Science Foundation
\$550,000 - 08/15/94-07/31/97

Mt. Lemmon Observatory Operating

Robert D. Gehrz, Astronomy
Space Dynamics Laboratory
\$190,000 - 01/04/93-01/31/95

Correction

The Health Benefits of Consumption of Dairy Products

Linda J. Brady, Food Science and Nutrition (Agr)
Frank F. Busta, Food Science and Nutrition (Agr)
Sanofi Bio Industries
\$28,800 - 12/22/93-11/30/94

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number	612/624-4843		
Financial Reporting Fax Number	612/626-0321		
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Technology Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local, Priv & Corp Foundations, MN Med	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry/Food Companies (Med Sch only) Vol Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS, Foundations, Voluntary Health	Virginia Robinson	626-8267	virginia@ortta.umn.edu
DHHS, Voluntary Health	TBA	624-0035	
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), VA, St of MN, Associations	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Business/Industry/Food Companies (all non-HS)	TBA	624-5571	
AID, USIA, Other Gov (Cities/Counties/Other States), St of MN	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), DOC, NEH, NEA, Other Fed, ACS/PRF	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), USDOT, MNDOT, EPA	TBA		
Patents and Technology Marketing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Lisa Carlson	624-5007	lisa@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Proposal Development	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff	Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! It is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For non-AIS labels only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
		City, State: (if off-campus) _____

Please include your mailing label!

Clip and mail this page to:

- Tove Jespersen
- ORTTA
- 1100 Washington Avenue South, Suite 201
- Minneapolis, MN 55415-1226
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RESEARCH REVIEW

Office of Research and Technology Transfer

October 1994

MacArthur International Program Breaks New Academic Ground

Historian Helena Pohlandt-McCormick—German-born South African, one-time reporter for the *Detroit News*, now doctoral student at the University of Minnesota—went home in July to study the children’s uprising in Soweto.

“The government had skimmed off—exiled, imprisoned or killed—all the adult black leadership, so the kids took things in hand. On June 16, 1976, the children held a demonstration against the schools’ imposing Afrikaans, the white Afrikaner language,” she says. “The predominantly white police opened fire and killed several of them. Most were 14 to 18 years old, but there were younger ones, right down to seven and eight, killed in street battles or arrested.”

The children of South Africa have been neglected by historians, says Pohlandt-McCormick, partly because they’re so threatening. “You never get an interview with a child; they’ve never been allowed to voice their opinions. I’m trying to start from the bottom-up and interview both the people who were kids at the time and also to track down documents from the period produced by children—interviews with reporters, or school essays or diaries. There are very few, but there are a handful.”

To interpret those sources, Pohlandt-McCormick needs to know scholarship in child development, social work and psychology, and then she has to reinterpret that scholarship. “Psychologists tend to be a-historical and describe the South African youth movement as all one movement,” she says. “Obviously it isn’t; it’s several generations. In addition, psychology in South Africa is usually imported from the West and doesn’t deal very well with some African issues. On the other hand, a psychologist might explain that a certain behavior is normal for children around the world. As a historian, I wouldn’t know that.

“This is not a topic that historians usually like,” she says.

But it does have its world-wide implications. Children also play important roles in the Palestinian intifada and in Northern Ireland, says Pohlandt-McCormick, “and the youth of American inner-cities, while we might like to call them deviant gangs, do shape the society quite substantially.”



Historian Helena Pohlandt-McCormick and her daughter Zindzi record oral history among South African women and mothers. “It’s an advantage to have Zindzi along,” says Helena. “She opens doors, starts conversations, makes a tie.”

Inside

New Indirect Cost Rate Agreement	2
Research Animal Resources Seminars	2
New Effort Reporting System	3
IRB Human Subjects: Special Considerations for Inclusion of Children in Research	4
Graduate School News	6
Awards Available in Children’s Literature	8
Small Business Technology Transfer Program (STTR)	9
State Fair Goers See University Technologies	14
Newest Regent Tours University Labs	15
Seed Grants for Studies of Aging	17
Program Information	18
Faculty Research, Training and Service Awards	23

(Continued On Page 10)

Research and Technology Transfer New IDC Rate Agreement

A new indirect cost agreement has been signed. It is dated **August 16, 1994**, and provides the St. Anthony Falls Hydraulic Laboratory (SAFHL) with its own rates. No other changes were made. See rates at right. Please use the new date on those proposals requiring this information.

Correction: Due to a Freudian slip prompted by our desire to prolong summer, last month's issue was labeled "August" on the cover, when it was actually the September issue.

Research Animal Resources Animal Care Seminars

October 12, noon, 2-756 Millard Hall

The Long and Winding Road to a Unique and Precious Transgenic Mouse
Bob Ehlenfeldt, Assistant Scientist
Laboratory Medicine and Pathology

November 9, noon, 2-756 Millard Hall

Occupational Health Program for Personnel Handling Research Animals
Sheryl Daubenberger, Nurse Supervisor
Boynton Health Service

December 14, noon, 2-756 Millard Hall

Zoonoses - Part Two
Dave DeLong, Veterinarian
Research Animal Resources

January 11, noon, 2-756 Millard Hall

To be Announced
Craig Atkinson, Assistant Manager

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The predetermined rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If

you need to know which rate to use for a proposal, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on indirect cost rate development, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; Liz Warren, 626-9895; or Linda Lorenz, 624-6862.**

07/01/94
06/30/95

Research

On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hornel	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Assistant	Civil Service
7/1/94 - 6/30/95	23.0%	43.7%	29.8%
7/1/95 - 6/30/96	24.6%	43.9%	31.8%
7/1/96 - 6/30/97	24.9%	44.9%	32.7%

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009.**

Rate changes will be reflected in this section.

RESEARCH REVIEW

Volume XXIV/Number 4

October 1994

Director of Communications: **Michael P. Moore**

Editor: **Phil Norcross**

Editorial Assistant: **Tove Jespersen**

Associate Vice President: **A. R. Potami**

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call **Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.**

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Research and Technology Transfer New Effort Reporting System

The Office of Research and Technology Transfer Administration (ORTTA) is implementing a new quarterly effort reporting system for fiscal year 1994-95. Quarterly effort reports for July, August, September will be generated from the new system in mid-November, 1994. Departments will be required to review, certify and return the quarterly effort reports to ORTTA by December 30, 1994.

In the spring of 1993, ORTTA created the Effort Certification Review Committee, comprising primarily departmental users of the effort reporting system, to make recommendations for a new system. In the spring of 1994, Arthur Andersen & Co. was engaged to review the committee's report and to recommend additional improvements in terms of accountability.

The result of the team's work is a quarterly effort report which will eliminate much of the labor and recalculation required with the old monthly effort reports. The new system

will be more efficient, will improve accountability and will meet federal guidelines. New policies have been defined, operating procedures have been developed, and training materials have been written. Within the policies and procedures, the roles and responsibilities of the primary users of the system (ORTTA, deans, department heads and principal investigators) have been defined.

Additional information concerning the new system will be forthcoming in future issues of the *Research Review*. ORTTA has scheduled training sessions to orient departmental administrators and their staff to the new system. Registration materials were mailed in late September. If you did not receive such materials and would like to register for a class, please contact Mary Pat Bisek at m-bise@vm1.spcs.umn.edu or by fax at 625-9841. The sessions are scheduled as follows:

Day	Date	Time	Location
Tuesday	10/04/94	8:00-noon	Room 4-192A, EECS, Mpls
Thursday	10/06/94	8:00-noon	Library, Nolte Center, Mpls
Thursday	10/06/94	12:30-4:30	Library, Nolte Center, Mpls
Tuesday	10/11/94	8:00-noon	Room 342, Gortner Lab, St. Paul
Tuesday	10/11/94	12:30-4:30	Fireplace Room, Willey Hall lower level, West Bank
Wednesday	10/12/94	12:30-4:30	MN Commons Room, St. Paul Student Center
Thursday	10/13/94	12:30-4:30	Room 184, HHH Center, West Bank
Tuesday	10/18/94	12:30-4:30	Room 15-250, Moos Tower, Mpls
Wednesday	10/19/94	8:00-noon	Room 15-250, Moos Tower, Mpls
Wednesday	10/19/94	12:30-4:30	Room 626, Coffman Union, Mpls
Thursday	10/20/94	8:00-noon	Room 364, 1300 S. 2nd St. (FMC)
Thursday	10/20/94	12:30-4:30	Room 364, 1300 S. 2nd St. (FMC)
Tuesday	10/25/94	12:30-4:30	Room 239, Gortner Lab, St. Paul
Wednesday	11/16/94	12:30-4:30	Room 142, 1300 S. 2nd St. (FMC)

11/16 meeting for Morris, Crookston and other non-TC campus personnel only

Special Considerations for Inclusion of Children in Research

All research involving human subjects requires the consent of the subjects. In research involving children, parental *permission* and child *assent* are required. Researchers have reported that the inclusion of children in the assent process has proved beneficial to the child's understanding of and investment in the research project.

Parental permission is typically documented in a form similar to a subject consent form. The language in the document should be tailored to invite "your child" to participate, and it should follow the essential elements of informed consent.

Once parental permission has been obtained, securing the assent or agreement of the child is required. Documentation of that agreement should be managed with an "assent form"; a child-friendly document that outlines the essential information that the child must have to make a decision about participation. The child's affirmative agreement to participate is required. Mere failure to object should not be construed as assent.

Only in extreme cases where direct benefit can be assured does parental permission overrule a child's dissent to participate.

The Institutional Review Board: Human Subjects Committee of the University of Minnesota has established the practice that all children eight years of age through seventeen years should be given an opportunity to assent to participation. The IRB has consulted with its members who are experts in child development and has determined that eight years of chronological age typically assures a level of cognitive and emotional development adequate to the assent process. There are always exceptions, and the IRB asks researchers to be sensitive to the needs of children under the age of eight who may be capable of assent.

Researchers planning to include children in their projects should include a justification for inclusion that documents the benefits that are likely to accrue to a child participating in a project, and the researcher should develop a parental permission (consent) form and a child's assent form for review and approval by the IRB.

The design of an assent form is a critical component of the assent process. No form will ever replace the thoughtful discussion of assent with a child. It could be argued that the process is much more important than the document in securing assent from a child. But care must be taken in developing a document that is age-appropriate and study-

specific. The researcher should take into account the child's experience and level of understanding of an underlying condition and compose a document that is respectful of the child and conveys the essential information the child needs to make a decision. The form should:

- include a brief statement of purpose;
- describe procedures (including time commitment);
- affirm the voluntary nature of the assent process;
- describe pain or discomfort that may be experienced;
- include a brief explanation of alternatives;
- describe benefit or compensation, if any; and
- offer to answer questions.

The document should be limited to one page if possible. Attach schema or charts or pictures that might be helpful to the child. The use of larger type might also be helpful to young children. Studies involving older children or adolescents should include more information and may use more complex language than studies involving younger children.

The IRB recognizes that the design and composition of the assent form is a difficult exercise. The creation of good assent forms is something of an art and there is no single right way to handle assent. The IRB has developed a sample for a nontherapeutic study where assent would be required (see facing page). The form is meant as a guide in terms of content areas and simple language. The form has been tested using standard readability software and by piloting its use among children. The form passes tests for both readability and comprehension of essential elements.

If you have questions on this or on the sample assent form following, call Moira Keane at 624-9829.

Sample Assent Form
Fictitious Toothpaste Study

We are asking if you are willing to use our new toothpaste, because we are trying to learn more about how to prevent cavities in kids your age. Because you have had 3 or more cavities in the last year, we are asking if you want to be in a study. It seems like some kids have teeth that never get cavities, and other kids get lots of them. We hope that our new toothpaste will help kids who seem to get a lot of cavities from getting so many cavities in the future. But we won't know if the toothpaste works until we try it.

If you agree to be in this study, we will ask you to brush your teeth with our toothpaste after breakfast, after dinner, and right before you go to bed. We will ask you to come in to see a dentist in our office once a month to take a quick look at your teeth. We will give your mom or dad all the toothpaste that you will need for the three months that you are in our study.

You may not like the new toothpaste. The new toothpaste might not work as well as the kind you are using now. If it does work, you may not have as many cavities in the future.

You will still have the same dentist if you say no to being in this study. *And*, if you change your mind during the study, you can always go back to your regular toothpaste. Being in this study is totally up to you, and no one will be mad at you if you don't want to do it.

You can ask any questions that you have about this study. If you have a question later that you didn't think of now, you can ask us next time.

Signing here means that you have read this paper or had it read to you and that you are willing to be in this study. If you don't want to be in this study, don't sign. Remember, being in this study is up to you, and no one will be mad at you if you don't sign this or even if you change your mind later.

Signature of Participant

Date

Signature of Investigator

Date

*The IRB thanks Summer Research Associate Jennifer Schumi
for her assistance in developing this assent sample.*

Graduate School News

Doctoral Dissertation Fellows

Congratulations are extended to the 1994-95 Graduate School Doctoral Dissertation Fellows. Each winner receives a 12-month stipend plus tuition and health insurance. The faculty fellowship committee selected the 46 Fellows in University-wide competition from over 170 nominees. Decisions were based on the importance of the student's research; the clarity with which it is conveyed to the nonspecialist; its potential for significant contribution to the field; the degree to which it manifests the student's independence, originality, and resourcefulness; the soundness of its methodology; the coherence of its presentation; and the student's academic record, publication record in the context of norms for the field, and timeliness of progress toward the degree.

Paul Michel Baepier

English

White Slavery in Africa: The Barbary Captivity Narrative in American Literature

Adviser: Edward M. Griffin

Jon Samuel Bassewitz

Comparative Studies in Discourse and Society

Orientalist Visual Discourse and the Consolidation of National Identity in Nineteenth-Century France

Adviser: Richard D. Leppert

Sameer Suresh Bharadwaj

Chemical Engineering

Catalytic Partial Oxidation in Novel Reactor Configurations

Adviser: Lanny D. Schmidt

Barbara Lafferty Braun

Epidemiology

Predictors and Correlates of Cocaine Use Among Young Adults

Adviser: David M. Murray

Rachel Jennifer Buff

American Studies

Narratives of Identity, Exile and Return: The Cultural Politics of Two Urban Ethnic Festivals

Adviser: George Lipsitz

Deborah Ruth Campbell

Nutrition

Plasma Carotenoids as Biomarkers of Vegetable and Fruit Intake

Adviser: Joanne L. Slavin

James Wendel Cox

History

A World Together, Worlds Apart: The Arikaras and the United States, 1803-1889

Adviser: Kinley J. Brauer

Gedeon Oliver Deák

Child Psychology

The Development of Flexible Categorization in Young Children

Advisers: Patricia J. Bauer, Michael P. Maratsos

Maarten Peter de Boer

Materials Science and Engineering

Experiment and Theory of Fine Line Adhesion

Adviser: William W. Gerberich

Robert Larry De Haan

Plant Breeding

Evolution and Development of Annual *Medicago* Species for Integration into Corn and Small Grain Systems

Adviser: Donald K. Barnes

Christina Diane DiFonzo

Entomology

Epidemiology and Control of Potato Virus Y in the Red River Valley of Minnesota and North Dakota

Advisers: Edward B. Radcliffe, David W. Ragsdale

Pi-Ling Fan

Sociology

Gender and Wage Attainment at Entry into the Labor Market

Adviser: Margaret M. Marini

David Robert Faust

Geography

Ecological Restoration in Rural India: The Contribution of Nongovernmental Organizations to Participatory Natural Resource Management

Adviser: Joseph E. Schwartzberg

Karen Sue Feldt

Nursing

Pain in Cognitively Impaired Elders

Adviser: Muriel B. Ryden

Jingtao Feng

Mechanics

Experimental and Numerical Studies of the Motion of Solid Particles in Viscoelastic Fluids

Adviser: Daniel D. Joseph

Doug S. Foulk

Horticulture

Russetting of "Haralson" Apple as Influenced by Wax Platelet Arrangement and Application of GA₄₊₇

Adviser: Emily E. Hoover

Karen Elizabeth Freeman

Child Psychology

Analogical Reasoning in Two-Year-Olds: A Comparison of Formal and Problem-Solving Paradigms

Advisers: Patricia J. Bauer, Michael P. Maratsos

Mark G. Friesen

Physics

Investigation of Vortex Interactions and the Super/Normal Transition in Layered Conductors

Adviser: Charles E. Campbell

Graduate School News

Christina Danielle Gallup

Geology

High-Precision Uranium-Series Dating of Fossil Corals and Other Marine Sediments: Implications for the Timing and Rates of Change of Late Quaternary Paleoclimatic Events

Adviser: R. Lawrence Edwards

Laura Sisola Gilchrist

Neuroscience

Structure, Function and Development of Octopaminergic Neurons in the Medicinal Leech

Adviser: Karen A. Mesce

Karen Sue Gustafson

Biomedical Sciences

Transcriptional Regulation of IFN-Induced HLA-E Gene Expression

Adviser: Gordon D. Ginder

Keri Cervantes Hornbuckle

Civil Engineering

Vapor Exchange of Semivolatile Organic Compounds with Natural Water and Terrestrial Surfaces

Adviser: Steven J. Eisenreich

Xiaodun Jing

Materials Science and Engineering

Structure Studies of Semiconductor Clusters

Adviser: James R. Chelikowsky

Debora Mary Katz-Stone

Astrophysics

The Evolution of Relativistic Particles and the Structure of the Magnetic Field in Extragalactic Radio Sources

Adviser: Lawrence Rudnick

Paul Matthew Kellstedt

Political Science

The Dynamic American Ethos: Value Conflict and Racial Policy Preferences

Adviser: James A. Stimson

Anja Sigrid Kohler

Biomedical Engineering

Grafting of Modified Phospholipids to Materials and an Evaluation of Their Biocompatibility

Adviser: Leo T. Furcht

Paul Gabriel Kotula

Materials Science and Engineering

Phase Boundaries and Reaction Kinetics in Oxide Ceramic Systems

Adviser: C. Barry Carter

Kathleen Rae Kuehnast

Anthropology

Split Images: Gender, Ethnicity, and Islam in Post-Soviet Kyrgyzstan

Adviser: Gloria Goodwin Raheja

Yakov E. Kutsovsky

Chemical Engineering

Nuclear Magnetics Resonance Imaging of Flow and Dispersion in Packed Beds

Advisers: H. Ted Davis, L. E. Scriven

William Perry Marvin

English

Ritus Venandi: Discourses of the Medieval Hunt

Adviser: David J. Wallace

Roberta Lynn Millstein

Philosophy

The Chances of Evolution

Advisers: John Beatty, C. Kenneth Waters

Jeanne Marie Minnerath

Microbiology

The Memory B Lymphocyte Response to the Self Antigen, Cytochrome *c*

Adviser: Ronald R. W. Jemmerson

Scott Lawrence Pratt

Philosophy

Inquiry and Social Diversity: John Dewey's Conception of Philosophy

Adviser: Douglas E. Lewis

Robert Jennings Rathmell

Music

"Storyteller" for Piano and Orchestra

Adviser: Dominick Argento

Kirsten Clarey Ridsen

Educational Psychology

The Role of Causal Inferences in Narrative Comprehension: A Test of Three Theories

Adviser: Paul W. van den Broek

Esther Fredericque Romeyn

American Studies

Performing Difference: Cultural Strategies in Ethnic Performances, 1890-1940

Adviser: David W. Noble

Laurie Ann Rudman

Psychology

To Be Or Not To Be (Self-Promoting): The Influence of Interaction Goals on Gender Stereotyping

Adviser: Eugene Borgida

Laura Allison Stringer

Recreation, Park, and Leisure Studies

Gender-Role Conformity as a Constraint on Women's Participation in Outdoor Recreation Activities

Adviser: Leo H. McAvoy

Joyce Ann Sutphen

English

Shakespeare and the Art of Memory

Adviser: Thomas S. Clayton

Sherif H. Nabil Tawfic

Pathobiology

Role of Prostatic Nuclear Matrix Proteins in Androgen-Mediated Growth

Adviser: Khalil Ahmed

(Next Page)

Graduate School News

Mark Gerard Tjoelker

Forestry

Global Climate Change and Boreal Forests: Response of Diverse Species to Elevated Carbon Dioxide and Temperature

Adviser: Peter B. Reich

Dirk H. Verschuren

Ecology

High-Resolution Reconstruction of Recent and Late-Holocene Climatic Change in Equatorial East Africa (Lakes Naivasha and Sonachi, Kenya)

Adviser: Herbert E. Wright, Jr.

James Robert Vyvyan

Chemistry

The Synthesis and Reactivity of Structurally Complicated Fischer Carbene Complexes

Adviser: Thomas R. Hoye

Michael Edward Young

Psychology

A Connectionist Analysis of Causal Attribution as a Form of Temporal Encoding

Adviser: Charles R. Fletcher

Dongxiao Yue

Physics

Conduction of a Weakly Interacting Electron Gas

Adviser: Leonid I. Glazman

Mark Edward Zimmerman

Geophysics

Structure and Rheology of Partially Molten Lherzolite

Adviser: David L. Kohlstedt

Awards Available in Children's Literature

The Children's Literature Research Collections have three award competitions associated with their Kerlan Collection, a collection of manuscripts and original illustrations for 8,000 children's titles.

The **Kerlan Award** recognizes a noteworthy author or illustrator who has donated manuscripts or original art to the collection. The award committee invites nominations, post-marked no later than November 1 and addressed to the 1995 Kerlan Award Committee, 109 Walter Library.

The **Ezra Jack Keats/Kerlan Collection Fellowship** from the Ezra Jack Keats Foundation provides \$1,500 to a "talented writer and/or illustrator of children's books who wishes to use the Kerlan Collection for the furtherance of his or her artistic development." Special consideration will be given to someone who would find it difficult to finance the visit to the Kerlan Collection. Applications for 1995 are due May 1, 1995.

The second annual award for an **outstanding student paper** written using the resources of the Children's Literature Research Collections will be presented by the Friends of the Kerlan Collection. The award is \$100. Applications are due in June, 1995.

For more information, call the Children's Literature Research Collections at 624-4576.

Of Note

The American Psychological Association, at its recent annual meeting, honored Patricia J. Bauer, Institute of Child Development, for early-career contributions to psychology, and Regents' Professor Emeritus Paul E. Meehl, Department of Psychology, for distinguished professional contributions to knowledge.

The Council of Undergraduate Research, at its recent national conference, elected three Duluth faculty as officers: Joe Gallian, Department of Mathematics and Statistics, and Ron Caple, Department of Chemistry, are CUR chairs; Conrad Firling, Department of Biology, is a secretary.

The College of Education has awarded its Emma M. Birks Professorship in Educational Leadership to David Johnson, Department of Educational Psychology, and Rich-

ard Weinberg, director of the Institute of Child Development. They will each receive research support of \$25,000 per year for three years.

Lisa G. Collins, graduate student in American Studies, has been awarded a Ford Foundation Predoctoral Fellowship for Minorities by the National Research Council. The program is meant to increase the number of minority faculty members. Ford Minority fellows receive tuition and stipends for three years and meet in an annual conference. The NRC administers the program and makes the awards in an annual competition. Applications for the next competition are due at the NRC on November 4, 1994. For application materials, call the NRC Fellowship Office, 202/334-2872 or infofell@nas.edu.

Small Business Technology Transfer Program

Five federal agencies have begun grant competitions for university-industry R&D collaborations in 1995. NIH, NSF, NASA and the Departments of Energy and Defense will provide up to \$40 million through the Small Business Technology Transfer Program in federal fiscal 1995.

"This is an ideal program for transfer of technology from the University to industry," says Tony Strauss, ORTTA's assistant director of patents and technology marketing. "There's been a lot of interest and proposals, though the program is underfunded."

Pilot R&D projects to demonstrate the commercial potential of research results may be awarded \$100,000 for one year; successful pilot projects may enter a product-development phase and receive \$500,000. Acceptable topics are defined by the funding agencies.

An R&D proposal must be submitted by a small business, but 30 to 60 percent of the research must occur in a non-profit laboratory. Agreements between the business and the nonprofit need to define the allocation of intellectual property rights. ORTTA will work with Minnesota Project Innovation (MPI), a private, nonprofit corporation, to help University researchers pursue STTR grants. Given sufficient interest, ORTTA and MPI will conduct workshops for researchers and small businesses.

For its first year, fiscal 1994, STTR awards totaled about \$20 million. The amount available for fiscal 1995 is expected to double. Among the nonprofit institutions funded by NIH, NSF, NASA and Defense in 1994, most are universities. Department of Energy awards included more federal and independent labs.

Congress created STTR as a three-year experiment, instructing agencies with extramural research budgets of more than \$1 billion per year to devote a fraction to STTR: 0.05 percent in fiscal 1994, 0.1 percent in 1995 and 0.15 percent in 1996.

The first STTR solicitation for FY95 was issued by NIH in mid-September. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

Proposals are due December 1. Solicitations from NSF, NASA, Defense and Energy are not yet available. For further information, contact Ed Rippie at MPI, 612/338-3280, or Tony Strauss at ORTTA, 612/624-0869.

STTR Success and Promise

Agency	No. of 1994 applications	No. of 1994 awards	Total 1994 funding	Expected 1995 funding
NIH	400+	40	\$ 4.0 million	\$ 8.0 million
NSF	110	11	1.1 million	2.2 million
DoE	500	21	2.0 million	4.0 million
DoD	910	104	11.0 million	22.0 million
NASA	not available		1.9 million	3.8 million
Totals			\$20.0 million	\$40.0 million

Federal Grants and Contracts Weekly

Examples of STTR projects for 1994

- NIH: A grant to Cambridge Research & Instrumentation, Cambridge, MA, for a project with Woods Hole Marine Laboratory to develop an advanced microscopy system.
- DoE: A grant to Materials and Electrochemical Research Corporation, Tucson, AZ, for a project with the University of Illinois, Urbana, to develop a commercial, high-speed, hydrogen pellet injector.
- NASA: A grant to Endorobotics Corporation, Warren, NH, for a project with the University of California at Berkeley to develop "milli-robots for surgical tele-operation."
- DoD: A contract to Technos, Inc., Miami, FL, for a project with Florida Atlantic University to develop graphical imaging of waste or contaminant flow for environmental monitoring.

Federal Grants and Contracts Weekly

McKnight Land-Grant Professorships

McKnight Land-Grant Professorship nominations are due at the Graduate School, 313 Johnston Hall, by noon, October 21. Nominating procedures are contained in the May 2 memo from the Graduate School dean's office. Call Myrna Smith, 612/625-7579 if you have questions.

Pohlandt-McCormick works in the University's Department of History and in its MacArthur Interdisciplinary Program on Peace and International Cooperation. The latter is named for its patron, the John D. and Catherine T. MacArthur Foundation, which created about 20 such programs in the 1980s, and has since let the funding for most of them expire. The foundation continues to support the Minnesota program because of its interdisciplinary approach to peace, cooperation and the Third World.

"Our initial fellowship program," says Kennette Benedict, the foundation's director for peace and international cooperation, "included places with strong faculty in traditional

We also needed a range of thinking beyond weapons and strategy, a group of people willing to challenge each other's disciplinary perspectives and a place where students could find some nurturing.

security scholarship—Harvard, MIT, Stanford, Cornell, Chicago. But we also needed a range of thinking beyond weapons and strategy, a group of people willing to challenge each other's disciplinary perspectives and a place where students could find some nurturing. Minnesota was a natural for that. In the next few years we'll see a new group of young scholars better equipped than their predecessors to deal with the international scene."

Historian Allen Isaacman, director of the University's program, describes the job as "creating space for interdisciplinary conversation and cross-fertilization of ideas among young scholars—space for economists to discuss industrial development and agrarian change with anthropologists who understand local systems of knowledge and with agronomists and natural resource people who don't treat environment as a backdrop."

That interdisciplinary agenda is not easy to pursue. As Pohlandt-McCormick puts it, "just because you put a lot of intelligent, educated people together and give them lots of opportunity doesn't mean that they function well as a group."

The Minnesota MacArthur program is a fellowship program for doctoral and professional students—about 85 of them since 1989, representing approximately 30 nations and 20 academic disciplines—who study the "developing world." It provides them with tuition and stipends, workshops and seminars, predissertation travel and research funds, and beginning this fall a Ph.D. minor in "development studies and

social change." The MacArthur foundation has supported the Minnesota program to the tune of about \$2.5 million. "In addition," says Isaacman, "we have a unique relationship with the Fulbright Foundation by which 14 promising students from the developing world have been brought into the program as Fulbright-MacArthur scholars."

The program's objects of study, as described in its brochure, are "international studies from an interdisciplinary and cross-cultural perspective. It emphasizes study and research on issues of conflict, social change, justice and human rights, security and international cooperation, with particular emphasis on contemporary developing societies." It focuses on "sources of economic, political, environmental and social change and conflict, . . . the capacity of institutions in developing societies to undergo redesign and reform, . . . the enhancement of human rights, justice and freedoms, . . . the role of disaffected and disadvantaged sectors, . . . the significance of race, class, ethnicity and gender."

Isaacman is director of the program; political scientist Raymond Duvall is associate director for special projects. About 30 other faculty are formally associated with it, "all of them dedicated teachers and scholars," says Isaacman. The University's support for the program, he says, started with Bob Kvavik, now vice provost and associate vice president for academic affairs, who has argued for a decade or so that area studies are an insufficient approach to international studies.

The MacArthur program does seem a bit like area studies on a global scale—area studies for a world that has gotten smaller—but Duvall says it's different in that it seeks a balance between reductionism and overgeneralization. "Area studies tended to privilege what is unique about a place," he says. "The reaction against it was grand, sweeping claims about the world without adequate empirical grounds.

"The MacArthur program takes into account cultural and historical differences, but does not aggrandize those differences. A scholar doing work on Brazil needs to appreciate that Brazil has its own history, culture, institutions, but it isn't a world unto itself. One can make important comparisons between Brazil and, say, South Korea about the way the state affects economic development."

In some ways, the MacArthur program's advantages to its fellows are pretty straightforward and indispensable. Pohlandt-McCormick, for example, has an advisor, Charles van Onselen, at the University of the Witwatersrand in Johannesburg because Isaacman introduced them to one another. She has helped colleagues to find apartments, and to meet South African human rights lawyers. Altogether, four MacArthur students went to South Africa last summer.

The program has also led to funding for dissertation research. Typically, it puts up dissertation seed money and

(Next Page)

sends students overseas for a summer. They spend the following academic year in Minneapolis at weekly seminars on fieldwork, dissertation planning and grant proposing. As a result, says Isaacman, "The students have done extremely well in competitions. Richa Nagar and Yu Zhou in geography won NSF grants. Steven Taylor in political science won a grant from the Ford Foundation. Others are funded by the Social Science Research Council, the Rockefeller Foundation and the Guggenheim Foundation."

Pohlandt-McCormick was among the first graduate students ever to win an individual Research and Writing Grant from the MacArthur Foundation. She attributes her success in part to criticism she received in those fieldwork seminars. "When I write a proposal for funding, a geographer will nail me for some historians' jargon. A sociologist will ask 'What do you mean when you say *family*?' Someone from economics will object because I haven't mentioned class issues. It comes from all angles," she says. "All of our proposals benefitted vastly."

Along with connections and funding, however, the MacArthur Interdisciplinary Program means wrestling with contending epistemologies.

The epistemological conflicts can even be quite angry, according to John Collins, doctoral student in Cultural Studies and Comparative Literature. He does "narrative history" of the intifada, which means he doesn't seek *The Accurate Account* of what happened, but a more ambiguous record of what people say happened. That approach, he says, leads to "visceral" reactions from social and natural scientists. And at a conference last June, "I found myself getting really angry. It's not just the other people who are angry and personally invested. I am too. I have to think about what I am willing to accept as legitimate interpretation."

One approach to reconciling, or at least navigating among, the different epistemologies of the East Bank, the West Bank, and St. Paul is to put heads together over specific problems, like the reconstruction of post-apartheid South Africa. "We have people from geography, history, law, comparative literature coming together over the fundamental problems South Africa must address," says Isaacman. "They are Americans, Germans, Scots and South Africans of different races. They are asking how do you create a democratic, just, and economically viable South Africa?"

Fall and winter, MacArthur faculty and students meet in workshops on specific contemporary problems. The current workshop series, led by political scientist Kathryn Sikkink, along with Duvall, is on "transnational issue networks" for women, indigenous people, human rights and the environment. Come winter, discussion will turn to "sustainable development, global justice and the environment," led by sociologist Jeffrey Broadbent and fisheries biologist Anne Kapuscinski.

Another approach is the direct one, to hold a seminar on comparative epistemology. Cell biologist William Cunningham and anthropologist Lisette Josephides will lead that seminar in spring 1995. Its title is "Approaches to Knowledge and Truth: Defining Ways of Knowing."

"There's a lot of misunderstanding about what's valid knowledge," says Cunningham. "The students thought it would be useful to have a seminar on epistemology: How is research done? What is meaning? What's acceptable in different areas? For a physical scientist like myself, research means controlled experiment. But a social scientist can't put on a revolution and see how it works out. In the seminar, guests and panels will give the perspective from their fields. John Collins has put together a wide-ranging group of readings."

For some students, contending epistemologies are simply a pleasure, rather than a struggle. Zara Kivi Kinnunen has been operating in interdisciplinary mode for a long time. She seems a little less in awe of the MacArthur program as a result. "Maybe I'm ignorant enough that I don't know what prejudices I'm supposed to have," she says. "Interdisciplinary work is less fascinating and less troublesome than people in only one discipline would like to think."

Kinnunen applies critical theory to human rights law as a student in the Department of Cultural Studies and Comparative Literature. As an undergraduate, she studied Spanish and French in Minneapolis, Mexico and France. Then in California, she earned a master's in teaching English as a second language. After a law degree here at the University, she practiced in Atlanta for two years. She traveled to Haiti for a

For a physical scientist research means controlled experiment. But a social scientist can't put on a revolution and see how it works out.

Minnesota legal advocacy group and ended up teaching human rights seminars there. Now she teaches critical thinking and literature at the University of St. Thomas.

Kinnunen's chief objects of study are international human rights law and African "customary" law. For example, she's been examining what she calls "legal categories": "What is a *minority*; how is it constructed and defined?" A group of nationalists, she points out, can define a minority group in order to create opposition and so unite themselves. But minority categories are "never questioned in law," she says. When Kinnunen last visited South Africa, before Nelson Mandela's election, there were white courts and black courts. In the black courts, white judges decided in each case

{Next Page}

MacArthur

(Continued From Previous Page)

whether to apply Dutch South African law or some variety of indigenous customary law that differed with each ethnic group. "I'm interested in how those decisions were made," says Kinnunen.

Kinnunen will assert with utter confidence that she could do her work without the MacArthur program. "My own department is very good. My advisor, Prabhakara Jha, would have pushed me in other directions." At the same time, "I like the MacArthur program very much," she says. "My work is much stronger because of contact with African historians, with geographers, with economists," and that contact has helped her learn what to read in political philosophy and anthropology. She finds parallels between anthropologists' development theory and the development of human rights law. "Development theory fits everyone into a certain economic model. Human rights are a moral model, if you will. Are they a Western construction?"

For one more example of how the MacArthur program has been both essential and challenging for its students, consider the team of Draeger and Voight. Kathryn Draeger, a soil scientist, and Charlotte Voight, an anthropologist, did dissertation research together in Ecuador while working for the U.S. Agency for International Development. They were able to establish that collaboration, they say, because money from the U.S. AID and the MacArthur program "gave credence to renegades." But their teamwork comes at a price.

"Char and I will be collaborating for the rest of our lives," says Draeger, "According to a lot of people in my department, this is *not* what a soil scientist does."

Draeger describes her work in Ecuador as typical collecting, field experiments and lab work. She studied a group of fungi, called "VAM" for short, that can fertilize beans by

providing phosphorus, much the same way *Rhizobium* fertilize beans with nitrogen. In addition, however, she surveyed the farmers about their planting decisions. "Three or four of the [other] local crops, crops domesticated by the Incas, push out the fungi I was looking for, yet they are ubiquitous in Colombia, 100 miles away," she says. "It's possible that, through these farmers, Incan culture affects the microbe

population in the soil today." In other words, those Incan crops may be the reason Ecuadoran beans yield relatively few bushels per acre.

Voight surveyed the same group of farmers to learn how they decide what and when to plant, how they weigh the risks and benefits. The ultimate goal is to learn what will lead those farmers to adopt or not adopt new technology if AID introduces it. "What do they really want? Do they even care about new technology?" she asks.

Voight says she entered the work expecting to provide Draeger with the insights of a social scientist. "I didn't, as I do now, look at what I gain from her. In the later part of the project I ended up doing most of my surveys by myself. I would be asking farmers about diseases and pests and where they come from, but I didn't have the agricultural background to get meaningful information."

"When you're out in the field, not in a library or a coffee shop, talking to a farmer whose beans have turned yellow, it is easier to grasp

the importance of a team like we could make," says Draeger.

Draeger has since finished school and is now creating a non-profit organization, Sustainability International. She finances it by studying the use of sewage sludge to reclaim gravel pits, in the employ of N-Viro Minnesota, a Minneapolis corporation. Sustainability International is to be a global network and watchdog for preserving cultures and environments. "I don't think the two can be separated," she says. "We need diversity, whether cultural or ecological." Voight serves on Sustainability's board of directors. Over the summer, she found relief from dissertation writing by collecting plant-growth data in the gravel pits.

On the one hand, Draeger and Voight will tell you that even the MacArthur program did not make their collaboration easy. "Char and I were the first class of MacArthur stu-



Zara Kivi Kinnunen, doctoral student, critical theorist, lawyer and instructor for the University of St. Thomas. "Maybe I'm ignorant enough that I don't know what prejudices I'm supposed to have."

{Next Page}

dents," says Draeger. "There were times when it was not fun, not even a little."

For the MacArthur program's first two years, Draeger was the only natural scientist among its students, and she says the program did not fully understand what she could contribute. She was awarded a predissertation grant for travel to Ecuador, but it came with the stipulation that she first study political science and Ecuadoran politics, even though she had lived there before. Voight, by contrast, had no experience with farming, but "nobody ever made me take an agronomy course," she says.

Isaacman describes the MacArthur program's broadening into natural sciences as an incomplete process: "Five years ago this was largely a social science program. We spent the first couple years in conversations across the line from social sciences to humanities, around issues of culture and values. Then we realized that when people interact with their governments, the natural environment is not just a backdrop. Issues that seem remote for many of us in the social sciences—pollution, crop rotation, soil nutrients—became very central." Originally, the program accepted students from the Humphrey Institute, the Law School and the Colleges of Liberal Arts and of Agriculture. This year, it granted fellowships to three students from the Colleges of Natural Resources and of Biological Sciences, and faculty from those colleges have joined the MacArthur program's

Originally, the program accepted students from the Humphrey Institute, the Law School and the Colleges of Liberal Arts and of Agriculture. This year, it granted fellowships to three students from the Colleges of Natural Resources and of Biological Sciences, and faculty from those colleges have joined the MacArthur program's steering committee.

steering committee. There are also informal relations between MacArthur and the Schools of Public Health and of Social Work.

"In some sense there is a bias against Saint Paul, because students in the sciences probably haven't had international experience. They haven't traveled, haven't had the background courses," says Cunningham. At the same time, "we're trying to recruit students in conservation biology, and a student who has the characteristics we're looking for would actually be favored. It's a little bit delicate. I don't want to emphasize the difficulty and make this sound like a troubled program. I think it's quite successful."

On the other hand, Draeger and Voight also affirm that without MacArthur there would have been no teamwork opportunity at all for them. Misguided academic discipline, they think, makes their work unpopular. "Especially as a graduate student, you're supposed to stay in the straight and narrow, to work in your discipline, to be utterly independent," as Draeger puts it. MacArthur and AID funding paid for their deviation from the norm, and MacArthur just plain brought the soil scientist and the anthropologist into the same room. "The only reason I ever went to the West Bank, other than the 400 Club or the Riverside Cafe," says Draeger, "was Allen Isaacman forcing us to go to those Friday afternoon seminars."

Voight is now writing a "traditional" dissertation, she says, because of a "schizophrenic" separation in the academy. The arrangement grates on her. "For the purposes of the University, over here is my dissertation and over there is the AID project. If that's the kind of training we're getting, then how are we supposed to magically move from this to collaborative research, writing or editing? Isn't it saying that that's a lesser kind of work, a quirky aside for people who need help?"

"You have to make programs like MacArthur. People will do good collaborative work even if they have to sacrifice prestige in their disciplines," says Voight. "I can't wait to get done so that I don't have to make that separation any more. And I'm very grateful for the few anthropologists who do support my work."

Cunningham, who has no MacArthur fellows among his own students, appreciates the difficulty of interdisciplinary doctoral work. "Certainly to get a Ph.D. you've got to be an expert in something. So students, on the one hand, would be well-advised to stick to their areas because they want to get jobs and they want to get on with their careers," he says.

Nevertheless Cunningham and others affirm that the MacArthur work is worth doing. Specialization is "antithetical to seeing how things fit together," he says. "If you're working on development issues, where economics and social sciences and political science and environment are all intertwined, either you need some kind of generalists, or you divide it up and then combine what you find, which means you need a common vocabulary."

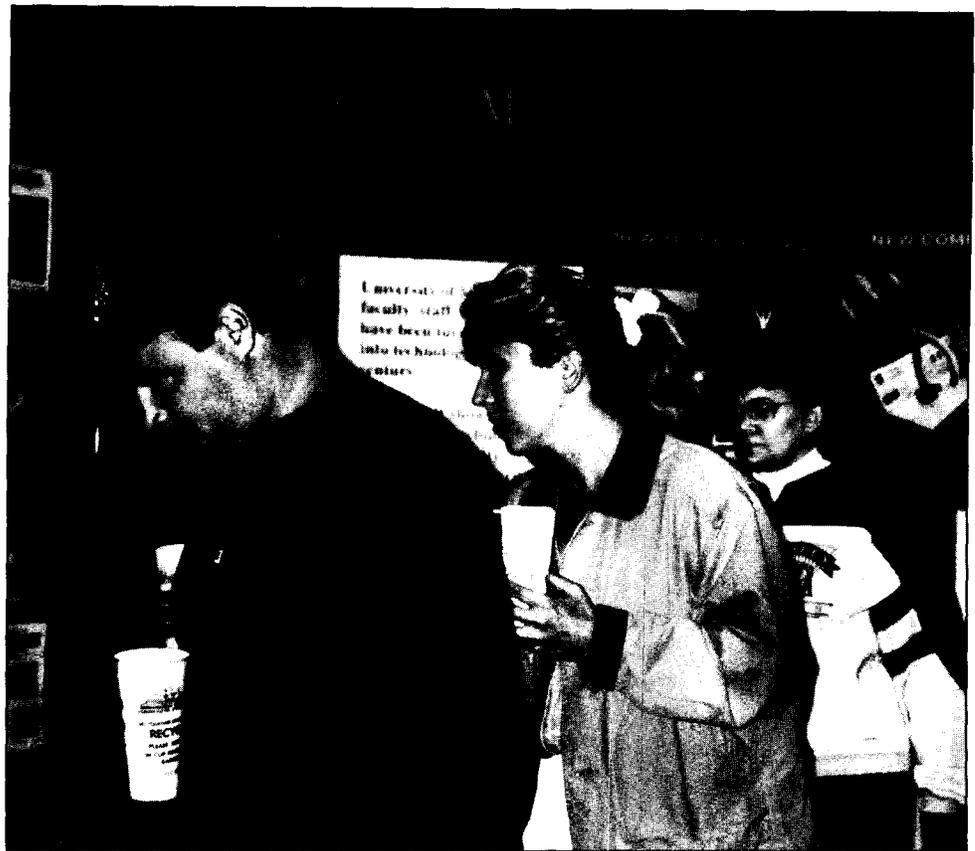
At one point, the MacArthur students made clear they wanted to work harder at MacArthur business, and to have more intellectual coherence in that work. In response, the program made its seminars and workshops into a credit-earning Ph.D. minor. Before this fall, they had been mandatory, but *extracurricular*, events.

The tension between specializing and generalizing is not unique to students of course. So Isaacman, Duvall and others also created the Minnesota-Wisconsin-Stanford Consortium

(Continued On Page 16)

State Fair Goers See University Technologies

More than 120,000 attendees of the 1994 Minnesota State Fair visited a new exhibit hall called "The Wonders of Technology," according to the Minnesota High Technology Council, which sponsored the exhibit. University of Minnesota inventions were shown in a display highlighting research projects that have resulted in new industries and products. Aurora, the solar car entered in last year's Sunrayce '93 by Institute of Technology students, served as the centerpiece in the exhibit hall. Other exhibitors included U.S. West, NASA, and a 3M-sponsored "Newton's Apple" display.





Postdoctoral research associate Bill Ojala (right) and Biomedical Engineering Center Director Leo Furcht (center) describe research in the center's x-ray crystallography laboratory to Regent Hyon Kim and Rex Krueger.

Newest Regent Tours University Labs

On September 7, four laboratories hosted Regent Hyon Kim, who was accompanied by Rex Krueger of the Norris Institute and the Minnesota High Technology Council, and by ORTTA staff members Tony Potami, Tony Strauss, Jim Severson and Mike Moore. The group heard descriptions of research and teaching projects, and saw specialized equipment at the Biomedical Engineering Center, directed by Professor Leo Furcht; the Dental Research Center for Biomaterials and Biomechanics, directed by Professor William Douglas; the Center for Interfacial Engineering, directed by Professor D. Fennell Evans; and the laboratory of Professor Bianca Conti-Fine in the Department of Biochemistry, College of Biological Sciences. Regent Kim commented that she planned to make research one of the main agenda items she will focus on during her service on the Board of Regents.

Associate Professor Maria Pintado (right) and Regent Hyon Kim (left) listen to Rithy Khieu describe her summer experience working on a research project for 3M in the Dental Research Center for Biomaterials and Biomechanics. A 1994 graduate of Shattuck-St. Mary's high school in Faribault, Minnesota, Khieu has enrolled in the University's Institute of Technology and is considering a part-time position working with Dr. Pintado, her mentor.



on International Peace and Cooperation, and persuaded the MacArthur Foundation to fund it for four years, starting in 1993. What the Minnesota MacArthur program provides for students, the Consortium provides for students and faculty. "We hope to create a network of faculty who will continue to inform each other's work, so they won't be isolated throughout their careers," says Isaacman.

The full consortium met for the first time last June. Its members sought to map out a course of research *by consensus*. They were 56 academics from six social sciences, along with cultural studies, engineering, theology, law, and biology; they were faculty and students from three high-powered universities; and they were people who had spent their youths in 16 different nations on five continents.

"The first couple of days were cumbersome, circuitous, frustrating, agonizing," says Duvall, chief organizer and master of ceremonies. The problem was not language barriers, or turf battles, or disagreement about what makes a reliable and useful source of data. "It was not anything as tangible as that."

Many of the participants had previously met in more specifically defined workshops. At Minnesota they explored grassroots democratization in developing nations; at Wisconsin, sustainable development; at Stanford, ethnic unrest. They came together on the West Bank seeking themes and research agendas that span those three topics. They left with what Duvall calls "interdisciplinary, cross-institutional research networks" or "invisible colleges."

The particular invisible college that Duvall joined is 11 scholars studying "global and local discourses on policy issues, identity, and resistance." They are united, he says, by their chief method of operation—discourse analysis. "We hold in common the view that economic policy debates, social identities, and domination and resistance are socially constructed, and the ways that human beings produce and express meaning is central to that social construction. We're trying to avoid precise definition of discourse analysis, actually." The point is not so much *what*, as *who*. Discourse analysis started as a matter for humanists; now it has gained acceptance among social scientists. "Here are people working together," says Duvall, "from sociology, anthropology, political science, history, and cultural studies."

Is this how new academic disciplines get started? Duvall says he doesn't know. Cunningham says yes. "But it's like starting new businesses," he adds. "For every 100 new business that start, 95 don't succeed. I think an awful lot of people are trying to forge new disciplines. If you're successful, it's very rewarding, but it's not the easiest path."

By Phil Norcross

Reply to Info Superhighway

The U.S. government seeks comment on how the info superhighway will affect the quality of life. Secretary of Commerce Ronald Brown, in his role as chair of the Information Infrastructure Task Force, in September published a draft report titled *The Information Infrastructure: Reaching Society's Goals*. The report describes benefits and barriers in the national information infrastructure with regard to eight areas: "investment in people with disabilities," electric power, transportation, telecommuting, emergency management, environmental information, arts and humanities, and law enforcement. Ask for NIST Special Publication 868 from the National Technical Information Service, 703/487-4650; or travel the Internet to the task force (iitf.doc.gov) and look in *speeches/testimony/documents*, subhead *documents/papers*.

CRADAs on the Increase

Though industry officials claim they are reluctant to collaborate with NIH, the number of Cooperative Research and Development Agreements (CRADAs) involving intramural NIH scientists has increased, according to panelists at a September 8 meeting on CRADAs in Washington, D.C.

Consumer advocates called the increase evidence that industry will continue to take part in CRADAs, with or without limits on the prices of resulting pharmaceuticals. Industry officials argued that, despite the increase in CRADAs, the number of companies taking part may have decreased, and that the increase would be greater without the pricing issue.

Restricting price limits to products mostly developed before establishment of a CRADA does not solve the problem, said William Corr, a deputy assistant secretary of health. It does not prevent a pharmaceutical being developed with substantial taxpayer funding and then being priced beyond the reach of consumers.

From *Washington Fax*

International Grant Writing Advice

David F. Steele provides advice and grant writing support for University colleges, departments, centers and clusters of faculty pursuing major grants for international studies, programs, research and curricula. Steele is Coordinator for Grantswriting and Program Development in the Institute of International Studies and Programs. Call him at 149 Nicholson Hall, 612/624-6850, fax 612/626-1730, steel001@maroon.tc.umn.edu.

Seed Grants for Studies of Aging

The All-University Council on Aging has awarded seed research grants to three faculty for 1994-95, and research-paper awards to four graduate students.

The individual faculty awards are \$3,000 to \$4,000; the student awards are about \$500. Since 1983, the AUCA has awarded to UM faculty over \$140,000 in seed grants for research on aging with some relevance to Minnesota. It strongly encourages collaborative and multidisciplinary work.

The AUCA, chaired by Harlan Copeland of Vocational and Technical Education and Ken Hepburn of Family Practice and Community Health, also coordinates the Graduate Minor Program in Gerontology. The council is part of the Center for Urban and Regional Affairs.

Applications for the next faculty and student competitions are due in May, 1995. For more information, contact Executive Assistant Monica Colberg at 612/625-9099.

Seed Research Grants to Faculty

Decision Making by Elderly Patients with Cancer and their Caregivers

Shiela Corcoran-Perry, Nursing
John Kersey, Cancer Center, Laboratory Medicine and Pathology
Marsha Lewis, Nursing
Suzanne Narayan, Nursing, Metropolitan State University
Mary Sumpmann, Cancer Center

Anecdotal evidence indicates that patients and caregivers frequently seek assistance from nurse coordinators at the University Cancer Center for cancer-related decisions, often via spontaneous telephone conversations, up to 45 calls per day per nurse. This pilot study means to establish the foundation for a research program to enhance shared decision making among elderly patients with cancer, their caregivers and health professionals. The nurse coordinators will be interviewed as soon as possible after the telephone conversations in order to collect data on three topics: the scope and nature of the decision-making topics addressed, the types of assistance requested, and the nurses' perceptions of the assistance required. The data will be qualitatively categorized and compared with descriptive data about patients' ages, health and living situations in order to look for patterns in their requests.

Postmenopausal Estrogen Deficiency and Tooth Loss

Stephen K. Shuman, Preventive Sciences
Mary Beth O'Connell, Pharmacy Practice

Postmenopausal estrogen deficiency can lead to osteoporosis, and there is growing evidence that osteoporosis affects the alveolar bone necessary to support natural teeth, dental implants and removable dentures.

However, it is still unclear whether declining estrogen levels after menopause contribute to actual tooth loss and whether estrogen replacement therapy would be of benefit in this regard. This study will shed light on these issues by retrospectively comparing tooth loss in two groups of postmenopausal women—an estrogen-supplemented group and a nonsupplemented group. Data on perimenopausal tooth loss that is available from dental records will be combined with demographic, medical and socioeconomic information. Tooth loss in each group will then be compared statistically to detect an association with estrogen deficiency. This preliminary study is an important step toward prospective studies now of interest to both the NIH and the pharmaceutical industry.

Molecular Studies of Aging in Peregrine Falcons: Test of the Mammalian Results

Robert M. Zink, Bell Museum of Natural History

Studies of rhesus monkeys demonstrate that the older monkeys exhibit a relatively high percentage of damaged mitochondrion DNA, which is likely related to physiological problems typically associated with aging. Zink will determine if the same effect is evident in blood samples from known-age falcons. If it is, it will indicate that a general phenomenon of aging in higher vertebrates, such as humans, is related to DNA damage. The results will also benefit efforts to restore and conserve the peregrine falcon. Zink notes that this seed grant allows him to proceed in a new research direction. His previous research uses molecular biology to investigate problems in avian taxonomy, biogeography and molecular evolution.

Graduate Student Paper Awards

Staging Age: Exposing the Barriers to Self-Representation Among the Elderly.

Anne Davis Basting, Theatre Arts and Dance

Pain in Cognitively Impaired Elderly.

Karen Feldt, Nursing

The Meaning of Difference in an American Nursing Home.

Lori Jervis, Anthropology

Effects of Environmental Support on Implicit and Explicit Measures of Perceptual and Conceptual Memory in Alzheimer's Disease and Aging.

Pauline Maki Kahn, Psychology

■ U.S. Department of Agriculture

National Research Initiative Competitive Grants Program

Applications are invited by the U.S. Department of Agriculture (USDA) for competitive grant awards in agricultural, forest and related environmental sciences under the National Competitive Research Initiative Grants Program.

Proposals are solicited for:

A. Conventional Projects

1. Standard Research Grants: research that is fundamental or mission-linked, conducted by individual investigators, co-investigators within the same discipline or multidisciplinary teams;
2. Conferences: scientific meetings that bring together scientists to identify research needs, update information or advance an area of research.

B. Agricultural Research Enhancement Awards

1. Postdoctoral Fellowships: for individuals who have received their doctoral degrees after January 1, 1992, and no later than June 15, 1995;
2. New Investigator Awards: for investigators who have completed graduate or post-doctoral training and are beginning their independent research careers;
3. Strengthening Awards: proposals that request funds for Research Career Enhancement Awards, Equipment Grants, Seed Grants, or Strengthening Standard Research Project Awards.

Following are program areas, contact telephone numbers (all area codes are 202), and deadline dates:

Improving Human Nutrition for Optimal Health	(205-0250)	November 14
Plant Genome	(401-1901)	November 14
Plant Genetic Mechanisms	(401-5042)	November 14
Plant Responses to the Environment	(401-4871)	November 21
Plant Pathology	(401-4310)	December 05
Photosynthesis and Respiration	(401-6030)	December 05
Soils and Soil Biology	(401-4082)	December 12
Water Resources Assessment and Protection	(401-4504)	December 19

Biological Control Research	(401-5114)	December 19
Entomology	(401-5114)	January 09
Nematology	(401-5114)	January 09
Weed Science	(401-4310)	January 09
Sustaining Animal Health and Well-Being	(401-6303)	January 09
Food Characterization/Process/Product Research	(401-1952)	January 17
Nonfood Characterization/Process/Product Research	(401-1952)	January 17
Biofuels Research	(401-1952)	January 17
Enhancing Animal Reproductive Efficiency	(401-6234)	January 17
Forest/Range/Crop/Aquatic Ecosystems	(401-4082)	January 23
Plant Growth and Development	(401-5042)	January 23
Ensuring Food Safety	(401-4399)	January 30
Assessing Pest Control Strategies	(401-5114)	January 30
Agricultural Systems	(401-1901)	January 30
Nitrogen Fixation/Nitrogen Metabolism	(401-6030)	February 06
Markets and Trade	(401-4772)	February 06
Rural Development	(401-4425)	February 06
Improved Utilization of Wood and Wood Fiber	(401-4871)	February 13
Improving Animal Growth and Development	(205-0250)	February 21
Identifying Animal Genetic Mechanisms and Gene Mapping	(401-4399)	February 21
Research Career Enhancement Awards	(401-6234)	February 27
Equipment Grants	(401-6234)	February 27
Seed Grants	(401-6234)	February 27

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information and application materials contact the Proposal Services Branch, Awards Management Division, Cooperative State Research Service, USDA, Ag Box 2245, Washington, DC 20250-2245; 202/401-5048; internet psb@darth.esusda.gov.

■ Robert Wood Johnson Foundation

Improving Malpractice Prevention and Compensation Systems

Improving Malpractice Prevention and Compensation Systems (IMPACS) is a new program of the Robert Wood Johnson Foundation. It will support demonstration and evaluation projects with the potential for becoming major innovations in the prevention of negligent occurrences or the compensation of medically injured patients. The program's goal is to test new models that could be adapted for use in other locales, where approaches to malpractice issues may vary.

The crisis in the availability and affordability of medical liability insurance in the mid 1970s and 1980s prompted modest tort reforms and relatively minor changes in adjudication procedures. Their success is mixed: for example, the reforms that have restricted compensation — particularly those that place a cap on damage awards — have reduced the cost of liability insurance but have made it more difficult for people whose injuries were both severe and produced by negligence to receive adequate compensation. The new IMPACS program will assist in the development, demonstration and evaluation of new reform models.

No specific models are prescribed. Rather, IMPACS projects will hold promise for significant improvements over the current system by:

- providing more appropriate incentives for preventing medical injuries, without inducing costly defensive medicine or adversarial provider-patient relationships;
- incorporating malpractice risk management into health care organizations' quality improvement initiatives;
- achieving greater efficiency or lower overall cost in processing medical injury claims or compensating injured patients by using nonadversarial systems; and
- providing benefits more consistent with actual damages for a significantly greater proportion of injured patients.

Two types of projects will be funded. Demonstration projects will support the development and implementation of new models of malpractice prevention or compensation, test previously developed but untried models, or test new applications of successful models. All demonstration projects must include an evaluation component. Evaluation projects may assess IMPACS demonstration projects or other significant innovations already in operation.

Up to \$6 million will be awarded in two cycles for grants of up to three years' duration. In general, budgets for demonstration projects are expected to be under \$750,000 and

budgets for evaluation projects to range between \$300,000 and \$400,000. Matching support of a minimum of 25 percent will be required for the implementation phase of demonstration activities.

Letters of intent are required. Guidelines for preparing full proposals will be provided to applicants whose letters of intent best meet the program's criteria. Letters of intent, consisting of no more than eight typewritten, double-spaced pages, should include:

- a brief statement of the project's principal objectives
- a description of the demonstration or evaluation approach to be used
- an identification of the major legal, technical or other barriers to successful completion of the project and approaches to overcoming them
- a timetable and estimated budget
- the qualifications of the likely project director and key staff and
- the name of the individual who will be primary liaison during the application process.

The first cycle of support requires a letter of intent by **October 14, 1994**, with a final application date of **November 23, 1994**. The second cycle requires a letter of intent by **February 1, 1995**, with the final application due **March 15, 1995**. Letters of intent and all inquiries should be addressed to Robert A. Berenson, MD, Director, IMPACS Program, Suite 525, 2233 Wisconsin Avenue NW, Washington, DC 20007; 202/687-0890, fax 202/687-0894. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ Department of State

Cambodian Genocide Justice Grant Program

The Department of State invites applications from organizations and individuals with interest and expertise in conducting research, training and cataloguing primary source documentation concerning the genocidal acts and other crimes against humanity committed by the Khmer Rouge in Cambodia between April 17, 1975, and January 7, 1979. Activities will include:

- Investigating crimes against humanity committed by national Khmer Rouge leaders during the referenced period;

{Next Page}

- Providing the people of Cambodia with access to documents, records and other evidence held by the Office as a result of such investigations;
- Submitting the relevant data to a national or international penal tribunal convened formally to hear and judge genocidal acts committed by the Khmer Rouge; and
- Developing a U.S. proposal for the establishment of an international criminal tribunal for the prosecution of those accused of genocide in Cambodia.

Awards are contingent on the availability of funding; project funding may be available at the level of approximately \$500,000. Cost-sharing is encouraged whenever feasible. Applications should indicate where collateral funding will be sought and where costs may be shared with existing programs, whether of the applicant or another institution.

The application deadline is **October 31, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Alphonse F. La Porta, Director, Office of Cambodian Genocide Investigations, Bureau of East Asian and Pacific Affairs, Department of State, Room 5206 Main State, 2201 C Street NW, Washington, DC 20520; 202/647-0808, fax 202/647-3069.

■ U.S. Department of Education

Jacob K. Javits Fellowship Program

The U.S. Department of Education announces the 1995 Jacob K. Javits Fellowship Program. The purpose of the program is to award fellowships to eligible students of superior ability, selected on the basis of demonstrated achievement and exceptional promise to undertake graduate study leading to a doctoral degree or an MFA in the fields of the arts, humanities or social sciences.

Eligibility is limited to students who, at the time of application, have no more than 30 semester hours or 45 quarter hours or equivalent of graduate credit. The maximum fellowship stipend for academic year 1995-96 is \$14,400. It is estimated that 80-100 individual fellowships will be awarded.

The application deadline is **November 28, 1994**. For further information, including application material, contact Audrey M. Smith, Jacob K. Javits Fellowship Program, U.S. Department of Education, 400 Maryland Avenue SW, Portals C80, Washington, DC 20202-5329; 202/260-3574.

■ BF Goodrich

Collegiate Inventors Program

The BF Goodrich Company and Inventure Place, home of the National Inventors Hall of Fame, announce their fourth annual collegiate inventors competition. The program seeks to encourage invention, student-advisor relations and understanding of the U.S. patent system. The competition is open to any student enrolled full time in a college or university in the United States.

The three standard categories of patentable invention are:

- *Utility*: a new or useful process, machine, manufacture or composition of matter or product;
- *Design*: a new, original and ornamental design for an article of manufacture;
- *Plant*: a new and distinct breed or variety.

For 1995 there are two categories of competition:

1. The **All-Collegiate Category** is for all undergraduate, graduate and post-graduate students. Up to three winners (or teams) will each receive a \$5,000 cash prize; advisors will each receive a \$2,500 cash prize;
2. In the **Undergraduate Category**, which is for undergraduate students only, up to three winners (or teams) will each receive a \$1,000 cash prize; advisors will each receive a \$500 cash prize. Undergraduate entries are automatically submitted in both categories.

Winners and their advisors will also be honored during the National Inventors Hall of Fame induction in July 1995.

Entries will be judged by a panel of nationally recognized mathematicians, scientists, environmentalists, biologists, doctors and patent attorneys. The judges' criteria are originality, completeness, usefulness/benefit and presentation.

Last year's competition judged 71 inventions from 54 schools, none from the University of Minnesota. The six winning inventions involved the use of Fullerenes to inhibit an HIV enzyme, synthesis of industrial isocyanurates, a microwave frequency microscope, corrective horseshoeing, a "paraplegic ski machine," and a robot wrist. The inventors came from UC San Francisco, Iowa State, Penn State, Montana State, Stanford and Notre Dame.

Entries must be received by the National Invention Center no later than 5 p.m. **February 14, 1995**. For further information and for application materials, contact program director Rose L. Heintz at Inventure Place, 80 West Bowery, Suite 201, Akron, OH 44308; 800/968-4332.

■ W.K. Kellogg Foundation

International Leadership Program

The W.K. Kellogg Foundation is seeking qualified candidates for the second group of the Kellogg International Leadership Program (KILP). Individuals will be selected who have demonstrated commitment to and a capacity for community change as well as the potential for growth. Applicants must be working in their home countries — in grassroots organizations, educational institutions, nongovernmental organizations or governmental agencies — and must have a desire to multiply the impact of their work for more people.

The emphasis is on community change. A range of leadership and community change strategies will be explored during the KILP program through a variety of activities. Opportunities are provided for leaders to analyze issues and strategies for change from national, regional and international perspectives. The program provides time for reflection and analysis in preparation for action to make a positive difference. KILP also encourages the formation of linkages and networks which can grow and support community and leadership development beyond the duration of the fellowship.

KILP is a three-year program. During each year, Fellows must spend 25 percent of their time on fellowship-related activities, including individual project work and attendance at regional and international seminars. Fellows will be expected to develop a project that will contribute to the vision and goals of an organization or community and will also expand the leadership capacity of the Fellow.

Awards of up to \$45,000 will be made on behalf of as many as 60 individuals for participation in all fellowship activities. Grants will be made directly to the eligible nonprofit organization that nominates applicants. Of this, \$30,000 will go toward the project and personal development portion of the fellowship, and up to 12.5 percent (\$15,000 maximum) of the Fellow's annual salary will go to the Fellow's employer for salary reimbursement. Fellows will continue their employment while pursuing fellowship-related activities; employers must agree to 25 percent release time.

Fellows will be drawn from the three world regions where the Kellogg Foundation is currently active — Latin America and the Caribbean, southern Africa (Botswana, Lesotho, South Africa, Swaziland and Zimbabwe) and the United States.

The application deadline is **January 31, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the W.K. Kellogg Foundation, PO Box 5196, Battle Creek, MI 49016-5196; 616/968-1611, fax 616/968-0413.

■ Procter & Gamble

University Exploratory Research Program

Timely and successful innovations are critically dependent upon the appropriate allocation of scientific and technical resources from both the academic and industrial communities. Major factors to be considered in allocating these resources are the balance between fundamental and applied research and the manner in which academic and industrial researchers interact.

As a major performer of industrial research, Procter & Gamble depends upon a continuous flow of scientific knowledge from universities in order to further its own research programs. The company is therefore keenly interested in maintaining close ties with the academic research community. Since its inauguration in 1981, the University Exploratory Research Program has been confirming the belief that funding such research in scientific areas of mutual interest is one of the best ways to do this.

The research intended to be supported in this program falls within the broad areas of chemistry, the biological sciences and chemical engineering. The focus of the program is on research which might not otherwise be funded because it is too speculative even though it has intriguing potential.

Three proposals are selected for funding each year at an amount up to \$50,000 per year for up to three years. Funds may be expended to support one independent unit of basic or fundamental research and may be used in whatever way is determined to be most effective by the principal investigator, within institutional policies. Funds may be carried over.

Application may be made by regularly appointed faculty members or post-doctoral appointees at any academic institution that confers the doctorate degree, worldwide. Applications from investigators who are beginning their academic careers or who are considering a change of research area are particularly encouraged. Collaborative proposals with one or more co-principal investigators will also be accepted.

The application deadline is **January 6, 1994**. A complete copy of the application packet is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Procter & Gamble Company, University Exploratory Research Program, Miami Valley Laboratories, PO Box 398707, Cincinnati, OH 45239-8707; fax 513/627-1153.

■ McKnight Foundation

Neuroscience Scholars Awards

The McKnight Endowment Fund for Neuroscience is soliciting applications in preparation for awarding McKnight Scholars Awards. These awards were initiated in 1976 to stimulate research in neuroscience especially as it pertains to memory and, ultimately, to a clearer understanding of diseases affecting memory. Over the years this mandate has been interpreted broadly to permit support of work in many relevant areas of neuroscience.

Up to six 1995 McKnight Scholars will be selected from applicants who hold the M.D. and/or Ph.D. degree and have completed formal postdoctoral training. Candidates should have demonstrated meritorious research in areas pertinent to the interests of the McKnight Endowment Fund for Neuroscience and should be in the early stages of establishing their own independent laboratory and research careers. Candidates must be citizens or lawful permanent residents of the United States.

Each McKnight Scholars Award provides \$40,000 annually in 1995, 1996 and 1997. Funds may be used in any way that will facilitate development of the Scholar's research program. No indirect funds are allowed. Award payments will be made directly to a sponsoring institution which must be located within the U.S.

The application deadline is **January 3, 1995**. Potential applicants should write or call McKnight to request application forms and guidelines. The address is the McKnight Endowment Fund for Neuroscience, 600 TCF Tower, 121 South Eighth Street, Minneapolis, MN 55402; 612/333-4220.

■ National Endowment for the Humanities Humanities Focus Grants

The National Endowment for the Humanities, Division of Education Programs, is implementing a new granting program called Humanities Focus Grants. These grants will enable a group of humanities teachers at any level to develop their understanding of an important issue or topic in the humanities, and, if they choose, to translate that understanding into a plan of action for their school or college curriculum.

Possible uses for the grant funds include providing time to free up participating teachers and scholars, supplying books and other materials needed for their investigations, and supporting travel of visiting experts.

Awards are expected to range from \$10,000 to \$25,000. The application deadline is **January 15, 1995**. Applications will be accepted by both the Higher Education Program and the Elementary and Secondary Education Program.

The new basic publication of the Division of Education Programs provides applicants with convenient access to all the information they need to prepare a proposal, including program descriptions,

discussion of application and review procedures, and the actual application forms. A complete copy of the publication is available from ORTTA and may be requested by calling 624-9004 or by sending a note to opher@ortta.umn.edu. For further information, call the Division of Education Programs at 202/606-8400.

Correction

The bibliography on pages 13 and 14 of the August issue should have read as follows:

Evans, Sara M. (History and Humphrey Institute), and Barbara J. Nelson (Humphrey Institute). *Wage Justice: Comparable Worth and the Paradox of Technocratic Reform*. University of Chicago Press, 1989.

Evans, Sara M. (History and Humphrey Institute), and Harry C. Boyte (Humphrey Institute). *Free Spaces: The Sources of Democratic Change in America*. Harper and Row, 1986.

Hanawalt, Barbara A. (History). *Growing Up in Medieval London: The Experience of Childhood in History*. Oxford University Press, 1993.

Hanawalt, Barbara A. (History), and Kathryn L. Reyerson (History), eds. *City and Spectacle in Medieval Europe*. University of Minnesota Press, 1994.

Olver, Peter J. (Mathematics), and David H. Sattinger (Mathematics), eds. *Solitons in Physics, Mathematics and Nonlinear Optics*. Springer-Verlag, 1990.

Phillips, William D., Jr. (History), and Carla Rahn Phillips (History). *The Worlds of Christopher Columbus*. Cambridge University Press, 1992.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
August 1994	285	73,795,064
Awards Processed		
August 1994	365	42,332,894
Proposals Submitted		
July 1994 - August 1994	493	111,334,137
Awards Processed		
July 1994 - August 1994	589	66,885,060
Proposals Submitted		
July 1993 - August 1993	509	84,995,387
Awards Processed		
July 1993 - August 1993	504	45,132,086

MacArthur Program on Peace and International Cooperation

Allen F. Isaacman, History
 Michael F. Metcalf, Institute of International Studies
 John D. and Catherine T. MacArthur Foundation
 \$500,000 - 01/01/93-08/31/2003

Strategic Management Research and Implementation

Robert Johns, Civil and Mineral Engineering
 St of MN, Department of Transportation
 \$48,400 - 06/06/94-03/31/95

Hunger and Exercise in Prader-Willi Syndrome

Bruce Bakke, Institute for Disabilities Studies
 U.S. Department Of Education
 \$135,000 - 07/01/94-06/30/95

Technology Development Fund

Anton R. Potami, ORTTA
 Blandin Foundation
 \$1,000,000 - 01/01/94-12/31/99

Geriatric Leadership Academic Award

Robert L. Kane, Institute for Health Services Research
 NIH, NIA
 \$76,650 - 01/15/94-12/31/94

Carotenoid Database for Cancer Research

I. M. Buzzard, Epidemiology
 NIH, NCI
 \$178,335 - 05/25/94-04/30/95

Community Intervention to Reduce Myocardial Infarction (MI) Delay

Russell V. Luepker, Epidemiology
 NIH, NHLBI
 \$447,737 - 08/15/94-05/21/95

Dietary Intervention Methods for Clinical Trials

Robert W. Jeffery, Epidemiology
 NIH, NHLBI
 \$321,586 - 06/01/94-05/31/95

The Behavioral Aspects of Cardiovascular Disease

Robert W. Jeffery, Epidemiology
 NIH, NHLBI
 \$153,023 - 07/01/94-06/30/95

Cardiovascular Disease Epidemiology and Prevention

Aaron Folsom, Epidemiology
 NIH, NHLBI
 \$99,774 - 07/01/94-06/30/95

Professional Nurse Traineeship Program

Sandra R. Edwardson, School of Nursing
 HRSA, Bureau of Health Professions
 \$129,048 - 07/01/94-06/30/95

Biological Priority and Regulation of Wound Healing

Michael D. Caldwell, Surgery
 NIH, NIGMS
 \$254,219 - 07/01/94-06/30/95

Scarce Medical Plastic Surgery Services

Bruce L. Cunningham, Surgery
 Veterans Administration
 \$225,000 - 01/01/94-12/31/94

Scarce Medical Cardiac/Thoracic Surgery Services

R. M. Bolman, Surgery
 Veterans Administration
 \$1,139,450 - 01/01/94-12/31/94

Inflammatory Cell Regulation of Local Post-Injury Resolution

Michael D. Caldwell, Surgery
 NIH, NIGMS
 \$605,658 - 08/01/94-07/31/95

Phase III Clinical Protocol: Contrast Enhanced Magnetic Resonance Imaging (MRI) of the Liver

Arthur Stillman, Radiology
 Sterling Winthrop Research Institute
 \$101,560 - 05/04/94-12/31/94

Neuronal Membrane Lipid Oxidation in Parkinson's Disease

Govind T. Vatassery, Psychiatry
 NIH, NIA
 \$177,571 - 08/01/94-07/31/95

Cystic Fibrosis Center Program Accreditation and Funding

Warren J. Warwick, Pediatrics
 Cystic Fibrosis Foundation
 \$91,444 - 07/01/94-06/30/95

Toward a Model of Alzheimers Disease in Transgenic Mice

Karen Hsiao, Neurology
 NIH, NINDS
 \$182,622 - 08/01/94-07/31/95

Targeted Disruption of Jaw1, A Lymphoid-Restricted Endoplasmic Reticulum (ER) Protein

Timothy W. Behrens, Medicine
 Arthritis Foundation
 \$70,000 - 07/01/94-06/30/95

Training—Pulmonary Cell and Molecular Biology and Physiology

Peter B. Bitterman, Medicine
 NIH, NHLBI
 \$110,619 - 07/15/94-06/30/95

NMR Solution Structures of NAP-2 and PBP

Kevin Mayo, Center for Biomedical Engineering
 American Heart Association, Minnesota Affiliate
 \$23,250 - 07/01/94-06/30/95

Design and Use of CD7-Specific Recombinant Immunotoxins

Christopher A. Pennell, Laboratory Medicine and Pathology
 NIH, NCI
 \$125,364 - 01/01/94-12/31/94

Evaluation of an Adolescent Sex Offender Program

Michael H. Miner, Family Practice and Community Health
 St of MN, Department of Corrections
 \$53,398 - 06/01/94-06/30/95

Grants for Graduate Training in Family Medicine

Edward W. Ciriacy, Family Practice and Community Health
HRSA, Bureau of Health Professions
\$122,381 - 07/01/94-06/30/95

Cyclic ADP-Ribose-Dependent CA²⁺ Release Pathway

Hon Cheun Lee, Physiology
NIH, NICHD
\$151,355 - 07/15/94-04/30/95

Neurochemical Mechanism of Narcotic Action

Horace Loh, Pharmacology
NIH, NIDA
\$100,222 - 08/01/94-07/31/95

Single-Cell Analysis of HIV and Simian Immuno-Deficiency Virus (SIV) Central Nervous System Infections

Ashley T. Haase, Microbiology
Todd A. Reinhart, Microbiology
Pediatric AIDS Foundation
\$70,457 - 07/01/94-06/30/96

The Mechanism of Switching From an Acidogenic to a Butanol-Acetone Fermentation by Clostridium Acetobutylicum

Palmer Rogers, Microbiology
U.S. Department of Energy
\$188,180 - 04/15/94-04/14/96

Spectroscopic Probes of ATP-Binding Sites in Muscle

David D. Thomas, Biochemistry (MS)
Muscular Dystrophy Association
\$161,665 - 07/01/94-06/30/97

Structural Studies of Dioxygenases

Douglas H. Ohlendorf, Biochemistry (MS)
NIH, NIGMS
\$252,010 - 07/01/94-06/30/95

Developing and Improving Institutional Animal Resources

Cynthia S. Gillett, Laboratory Medicine and Pathology
NIH, DDR
\$405,179 - 08/01/94-07/31/95

Support for a Judicial Education Program at the Law School

Robert Levy, Law School
Edna McConnell Clark Foundation
\$150,000 - 03/01/94-02/28/96

Evaluation of Light Detection and Ranging (LIDAR) for Area Sensing of Vehicle Emissions-II

David L. Hofeldt, Mechanical Engineering
St of MN, Department of Transportation
\$148,841 - 07/06/94-06/30/95

Summer Program in Molecular Biology

Avner Friedman, Institute for Mathematics and Its Applications
Willard J. Miller, Mathematics
NIH, NCHGR
\$40,000 - 06/06/94-01/05/95

Beauford Watershed Individual Sewage Treatment Systems (ISTS) Study

E. Calvin Alexander, Jr., Geology and Geophysics
Blue Earth County
\$60,000 - 01/01/94-06/30/95

Rapid Prototyping Tools for Compilers and Translators

Matthew T. O'Keefe, Electrical Engineering
USDOD, ONR
\$136,055 - 07/01/94-06/30/97

Enhancements of The KRONOS Simulation Package and Database (Phase III)

Panos G. Michalopoulos, Civil and Mineral Engineering
St of MN, Department of Transportation
\$135,000 - 06/01/94-11/30/95

Synthetic Studies of Protein Stability and Folding

George Barany, Chemistry
NIH, NIGMS
\$176,516 - 08/01/94-07/31/95

Synthesis of Anti-HIV Michellamines A and B and Analogs

Thomas R. Hoye, Chemistry
NIH, NCI
\$176,516 - 06/01/94-05/31/95

Surface Stability and Overlayer Growth on High-Temperature Superconductors

John Weaver, Chemical Engineering and Materials Science
USDOD, ONR
\$85,000 - 01/01/94-09/30/94

Constructing a Synoptic History of the Infrared Activity of Comet P/Halley

John Mergen, Astronomy
Robert D. Gehrz, Astronomy
National Aeronautics and Space Administration
\$22,000 - 07/01/94-06/30/95

Strategic Management Design

G. Edward Schuh, Humphrey Institute
St of MN, Department of Transportation
\$46,000 - 06/20/94-03/31/95

Dentist-Scientist Award

Mark C. Herzberg, Preventive Sciences
NIH, NIDR
\$608,240 - 07/01/94-06/30/95

A Safety and Efficacy Evaluation of Ketoprofen Gel for Periodontal Therapy

Larry F. Wolff, Preventive Sciences
Block Drug Company
\$720,000 - 03/15/94-03/14/96

Bush Principals Program

John J. Mauriel, Carlson School of Management
Bush Foundation
\$1,525,446 - 07/01/94-06/30/98

Morocco Agribusiness Promotion Project

William Fenster, International Agricultural Programs
Development Alternatives, Inc.
\$370,000 - 03/01/94-07/23/97

Universal Detection Methods for Banana Streak Virus

Benham E. Lockhart, Plant Pathology
International Network for the Improvement of Banana and Plantain
\$98,000 - 06/01/94-05/31/96

Development of Stress-Tolerant Small Trees

Harold Pellett, Horticultural Science
Electric Power Research Institute
\$104,538 - 01/01/94-12/31/94

Homologous Gene Transfer Systems for the Mosquito

Ann Fallon, Entomology
University of Arizona
\$84,758 - 04/01/94-03/31/95

Identifying Dimensions of Spiritual Values in Natural Resource Settings

Dorothy H. Anderson, Forest Resources
USDA, North Central Forest Experiment Station
\$42,725 - 07/11/94-07/01/98

Eradication of Oak Wilt Fungus with Sulfuryl Fluoride

Elmer L. Schmidt, Forest Products
U.S. Department of Agriculture
\$36,000 - 06/15/94-03/24/95

Regional Ecosystems Approach to Common Loon Biology

Francesca J. Cuthbert, Fisheries and Wildlife
USDA, North Central Forest Experiment Station
\$64,000 - 06/22/94-12/31/96

Red-Shouldered Hawk Population Status and Habitat Use in Camp Ripley Training Site

John F. Andersen, Animal Science
St of MN, Department of Natural Resources
\$53,700 - 04/01/94-06/30/96

Center for Advanced Studies in Child Welfare Practice

Esther F. Wattenberg, Social Work
Bush Foundation
\$599,229 - 07/01/94-06/30/97

Liberal Education in Agricultural Sciences

Dennis Savaiano, Food Science and Nutrition (CHE)
U.S. Department of Agriculture
\$71,962 - 09/01/94-08/31/97

Optimal Dietary Complex Carbohydrates to Promote Bifidobacteria and Prevent Colon Cancer

Linda J. Brady, Food Science and Nutrition (Agr)
U.S. Department of Agriculture
\$147,000 - 07/01/94-06/30/96

Facilitating the Social Inclusion of Adults with Autism and Other Communication and Interaction Disorders

Jennifer York, Educational Psychology
Brian Abery, Educational Psychology
U.S. Department of Education
\$125,000 - 07/01/94-06/30/95

Schools and Families Together

Sandra Christenson, Educational Psychology
U.S. Department of Education
\$122,778 - 08/01/94-07/31/95

Salt Tolerance in Short-Stature Grasses

David D. Biesboer, Plant Biology
St of MN, Department of Transportation
\$203,817 - 07/11/94-07/31/97

Genetics of Bacteria that Utilize One-Carbon Compounds

Richard S. Hanson, Gray Freshwater Biological Institute
U.S. Department of Energy
\$81,480 - 03/01/94-02/28/95

Oldest-Old Mortality

James W. Curtsinger, Ecology, Evolution and Behavior
Matt McGue, Psychology
Duke University
\$93,000 - 01/01/94-12/31/94

Establishment of Native Sedge Vegetation in Created Wetlands

Edward J. Cushing, Ecology, Evolution and Behavior
Susan Galatowitsch, Plant Biology
St of MN, Department of Transportation
\$114,354 - 07/01/94-06/30/95

Human TH Cells Causing Myasthenia in Immunodeficient Mice

Bianca M. Conti-Tronconi, Biochemistry (CBS)
Zeng-yu Wang, Biochemistry (CBS)
Muscular Dystrophy Association
\$53,000 - 07/01/94-06/30/96

Experience in Informal Learning: A Museum-School Partnership

Kevin T. Williams, Bell Museum of Natural History
Medtronic Foundation
\$20,000 - 07/01/94-06/15/95

Wild Rice Breeding and Germplasm Improvement

Raymond Porter, North Central Agricultural Experiment Station
U.S. Department of Agriculture
\$133,005 - 06/14/94-04/11/96

Telecommunications Regional Planning and Coordination Grant for Metro Region

Donald Riley, Academic Affairs
St of MN, Higher Education Coordinating Board
\$100,000 - 03/15/94-12/31/94

Predicting Toxicity and Degradability of Quadricyclane

Subhash C. Basak, Natural Resources Research Institute, Duluth
USDOD, Air Force
\$225,103 - 07/01/94-06/30/95

Design of a Road Weather Information System (RWIS) Measurement System for MN/DOT

Michael E. Zervakis, Computer Engineering, Duluth
St of MN, Department of Transportation
\$24,873 - 07/18/94-11/30/94

Title IIA and Title IIC Adult and Youth

Don Cavalier, Student Affairs, Crookston
Northwest Private Industry Council
\$59,308 - 07/01/94-06/30/95

Sante Fe II Conference: "Remagnetization and Environmental Rock Magnetism: Clues to Records of Past Geodynamics and Global Change"

Subir K. Banerjee, Geology and Geophysics
Christopher P. Hung, Institute for Rock Magnetism
National Science Foundation
\$16,000 - 07/15/94-07/14/95

Partial Support for Institute for Rock Magnetism: Renewal

Subir K. Banerjee, Geology and Geophysics
W.M. Keck Foundation
\$250,000 - 07/01/94-06/30-96

Minority High School Student Research Program For 1993

Henricus C. Hogenkamp, Biochemistry (MS)
NIH, DRR
\$17,000 - 03/01/94-02/28/95

Training in Trauma Research

Michael D. Caldwell, Surgery
NIH, NIGMS
\$68,367 - 07/01/94-06/30/95

Meniere's Disease and Autoimmunity

Peter A. Santi, Otolaryngology
American Otological Society, Incorporated
\$25,000 - 07/01/94-06/30/95

Selection and Cultivation of Benign Stem Cells from the Bone Marrow

Philip B. McGlave, Medicine
American Medical Association
\$25,000 - 07/01/94-06/30/95

Efficacy of Sonicare in Maintenance of Dental Implants

Larry F. Wolff, Preventive Sciences
Optiva Corporation
\$50,262 - 04/01/94-12/31/94

Reducing Pesticide Use in Sweet Corn

William D. Hutchison, Entomology
Agricultural Utilization Research Institute
\$48,000 - 03/01/94-02/28/96

Adding Value to Bilateral Trade Data with Matrix Balancing

Terry Roe, Agricultural and Applied Economics
U.S. Department of Agriculture
\$25,000 - 06/06/94-07/30/95

Assessing Wolf Population Structure

L. David Mech, Fisheries and Wildlife
USDI, Fish and Wildlife Service
\$19,026 - 08/05/94-12/31/95

Conference on the Role of Men in the Lives of Children

Martha F. Erickson, Educational Psychology
Annie E. Casey Foundation
\$47,500 - 07/01/94-10/01/94

About the Sponsored Programs Information Network (SPIN)

The Sponsored Programs Information Network (SPIN) is a computerized locator system for funding opportunities (federal, nonfederal and corporate) for faculty and institutional research, development and education program support. It is available free of charge to University faculty and staff through ORTTA.

Based on a description of the research areas and/or the type of support sought, faculty and staff can search the Keyword Code Table and Award Type Table to identify codes for specific areas of interest. The Keyword Code Table, a taxonomy developed by SPIN to catalog funding sources, is divided into the following twelve major classifications:

- Agriculture/Food Sciences/Foods
- Arts/Humanities/Cultural Activities
- Behavioral/Social Sciences
- Education
- Energy
- Engineering
- Geographic Terms
- Health and Safety/Medical Sciences/Biomedical
- Law
- Management/Commerce
- Other (Any/All Disciplines)
- Science & Technology/Mathematics/Computer Science

The Award Type Table offers codes that will more specifically target the search results to the award type(s) sought. Some of the award types included in the Award Type Table are:

- Conference — Attend
- Fellowship
- Projects Outside the U.S.
- Publication
- Seed Money/Start-Up Funds
- Student Scholarship
- Training/Professional Development

The result of a search is a set of profiles of applicable funding sources that provides (1) the sponsor's name, (2) the sponsor's contact address and phone number, (3) deadline dates, (4) program titles, (5) objectives or interest areas of the sponsor, and (6) restrictions that would affect the submission of a proposal. This set of profiles is sent to the requestor.

ORTTA's gopher contains a section devoted to SPIN and offers you the opportunity to review the Keyword Code Table within the topics shown above to find keyword codes of interest. You then e-mail a note to the gopher editor (spin@ortta.umn.edu) requesting a SPIN search based on the chosen keyword codes (limit, 20 keywords) and award types (limit, 20).

Your search results will be sent by campus or regular mail. Please provide your name, address and also your phone number on the message in case ORTTA staff need to contact you for clarification. If the results of the search are not satisfactory, you may contact our office for further discussion and guidance in the selection of codes.

For further information regarding the SPIN system, please contact ORTTA through e-mail (spin@ortta.umn.edu) or call 624-9004.

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local, Priv & Corp Foundations, MN Med	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry/Food Companies (Med Sch only) Vol Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS, Foundations, Voluntary Health	TBA	626-8267	
DHHS, Voluntary Health	TBA	624-0035	
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), VA, St of MN, Associations	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Business/Industry/Food Companies (all non-HS)	Debra Elvine	624-5571	debra@ortta.umn.edu
AID, USIA, Other Gov (Cities/Counties/Other States), St of MN	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), DOC, NEH, NEA, Other Fed, ACS/PRF	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), USDOT, MNDOT, EPA	TBA		
Patents and Technology Marketing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Lisa Carlson	624-5007	lisa@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff	Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

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Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
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RESEARCH REVIEW

Office of Research and Technology Transfer

November 1994

Phillips Neighborhood and University Team Up Against Lead Poisoning

Susan Gust tends to describe her neighborhood's research collaboration with the University hospital's health clinic as a class struggle on its way to a happy ending.

She points out that she speaks in carpenters' jargon and working-class colloquialisms. The University doctors speak with the cold rigor of academic medicine. She says "lead poisoning," they say "elevated lead burden" and "high blood-lead levels."

In the early stages, when the Phillips Neighborhood Lead Collaborative was still a vague idea, and Gust was invited to describe it to University administrators, Gust recalls their conversations as having "classist innuendos." Between the lines, she heard, "If you're still in this neighborhood, you must not be smart enough to figure a way out of it." She also felt twinges of regret for the decisions that made her a carpenter instead of a genetic counselor, as she once dreamed.

But Gust and Amos Deinard, director of the Community-University Health Care Center/Variety Club Children's Clinic (CUHCC), gradually came to trust one another. "The most wonderful and simple part," she says, "has been accessing the hearts of what we now affectionately call 'the suits of the Lead Collaborative,' people who have seldom been able to sustain a relationship with us before." Around the neighborhood, she's heard the Lead Collaborative described as "a partnership with people we didn't used to like very much, or never knew."

Phillips is the largest neighborhood of South Minneapolis, one of the most ethnically diverse neighborhoods in the state, and one of the poorest. It is an old neighborhood, most of the houses and apartments built before 1940 with lead-



Doc Davis and Susan Gust of the Phillips Neighborhood Lead Collaborative.

Inside

FICA Withholding Rules for Fall 1994	2
IRB Human Subjects: Regents' Policy	3
New Effort Reporting System	4
State Government and University will Connect Counties to Internet	6
NIH: Notice of move to new quarters, NIGMS	6
3M Presenting Animal Seminar	6
New ORTTA Grant Administrators	7
Graduate School News	8
NSF Renews Engineering Centers	10
NIH: 1995 Appropriations for Health Research	11
RAR: Rate Changes for Animal Care	11
NIH Proposes Federal-Funding Oath on Patent Applications	15
University Receives NSF Infrastructure Awards	15
Program Information	16 - 18
Faculty Research, Training and Service Awards	19 - 21

(Continued On Page 12)

Student Payroll

FICA Withholding Rules for Fall 1994

Starting fall quarter 1994, graduate and undergraduate students employed at the University of Minnesota must meet both of the following tests in order to have salaries exempted from FICA withholding:

1. Be enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertations; and
2. Be employed for *not* more than twenty hours per week or on appointments *not* exceeding 50 percent.

These rules apply to both graduate and undergraduate students employed at the University. FICA withholding is determined each pay period based on *hours paid* in that period. Students must meet both the registration and hours worked requirements each pay period to avoid FICA withholding. No refunds will be issued. Registration deadlines for the first pay period of fall quarter 1994 were September 26, 1994, on the Twin Cities campus and September 9, 1994, at Duluth.

For students on bi-weekly payroll, it is important for departments to submit hours to the payroll department in a timely fashion to avoid hours from multiple pay periods being reported in a single period and subjecting students to FICA withholding when the time reported in a single pay period exceeds 40 hours.

RESEARCH REVIEW

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Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994;** this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; or Linda Lorenz, 624-6862.**

07/01/94
06/30/95

Research

On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hormel	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Students*	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	24.6%	36.3%	31.8%
7/1/96 - 6/30/97	24.9%	37.3%	32.7%

* Increase the indicated rates by 7.6 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertation; or if 2) the student is employed for more than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009.**

Rate changes will be reflected in this section.

IRB: Human Subjects Board of Regents' New Policy

Use of Human Subjects in Research

This policy was adopted by the Board of Regents on July 8, 1994, and supersedes that adopted on July 10, 1987.

The Board of Regents at the University of Minnesota adopts and continues its policy that all research involving human subjects conducted at the University of Minnesota shall be conducted in accordance with federal regulations including but not limited to the "Guidelines for Protection of Human Research Subjects," 45 Code of Federal Regulations (CFR) 46, established by the National Institutes of Health, and regulations to protect human subjects, 21 CFR 50, 312, 812, as established by the Food and Drug Administration.

In furtherance of that policy the Board of Regents directs as follows:

1. The University shall establish an Institutional Review Board (IRB) whose members shall be appointed by the vice president for research. At the discretion of the vice president for research, in consultation with administrative staff of the IRB, IRB panels shall be appointed to manage the research workload. Each IRB panel shall consist of at least five members with diverse backgrounds and expertise, one of whom comes from the community external to the University.
2. The IRB and its staff shall be responsible, in conjunction with administrative officers of the University of Minnesota, for assuring that all University personnel and student researchers comply with applicable federal regulations and guidelines. The IRB shall review and approve, require modifications of, or disapprove all University research involving human subjects in accordance with the administrative policies and procedures to be established hereunder. In addition, the IRB shall monitor and conduct continuing review of research at intervals of at least once per year. It shall continue to be the responsibility of the administrative officers of the University of Minnesota and each principal investigator to carry out the decisions of the IRB.
3. The IRB has the authority to inspect research facilities, and obtain records and other relevant information relating to the use of human subjects in research, and take such actions that are in its judgment necessary to ensure compliance with the federal guidelines and regulations, other applicable federal and state law, and the policies and procedures to be established hereunder, including action to suspend or terminate approval of research that is not being conducted in accordance with the IRB's requirements or that has been associated with unexpected serious harm to subjects.
4. The IRB shall report to appropriate University and federal government officials: 1) any unanticipated problems involving risks to subjects or serious or continuing noncompliance with IRB requirements; and 2) any suspension or termination of IRB approval of research.
5. The IRB, with responsible oversight by the vice president for research, shall establish appropriate administrative policies and procedures to implement this policy.

Research and Technology Transfer

The New Effort Reporting System: What the Principal Investigator Needs to Know

More than \$100 million in salary-related costs are currently certified by the University of Minnesota effort reporting system. Effort reporting helps ensure the recovery of those costs and keeps the University in compliance with federal regulations regarding sponsored research. In order to reduce compliance risk and safeguard against potential corrective action, the University has instituted a more efficient and user-friendly effort reporting system. The duties and roles of some individuals who certify effort will change, but it is vital that all employees involved in the certification process join together to minimize effort reporting errors.

ORTTA has provided training for department effort coordinators and administrators to let them know of the changes in their responsibilities. ORTTA will also be sending the *Effort Reporting Executive Summary* directly to principal investigators and other faculty members in November. The *Executive Summary* is intended to help them understand the need for effort reporting and how the new system will make effort reporting easier. It is crucial that all employees involved in certifying effort at the University understand their roles in the effort reporting system.

The University has recently implemented some significant improvements in its effort reporting system. Along with those improvements come some changes in the roles and responsibilities of employees certifying effort. However, the primary obligations of employees certifying effort have not changed. As outlined in the *Effort Reporting Policies, Procedures, and Instructions Manual*, principal investigators "are responsible for ensuring the appropriateness and accuracy of all effort expended on their sponsored projects." PIs must be aware of who is being paid from and who is contributing effort to their sponsored research accounts. Realizing that PIs are very busy, ORTTA is providing PIs a new tool to help manage effort reporting.

The "Sponsored Project Employee Summary Report" (SPES) will be distributed approximately 45 days after the end of each fiscal quarter. The SPES will list all employees who devoted effort to a given project during the previous quarter. As the individual with primary responsibility for the project, the PI will be required to verify that the employees listed did devote effort to the sponsored project. The PI must take action to correct any discrepancies on the report before signing and returning the SPES to the department effort coordinator. A sample of the SPES has been included on the facing page.

As the individual with the ultimate responsibility for the sponsored research project, the principal investigator must

be familiar with the general requirements of effort reporting as outlined in the *Effort Reporting Executive Summary*. In addition, PIs should be aware that all sponsors require PIs to accurately certify effort on their sponsored projects. For example, a PI cannot certify 100 percent effort on a project when the PI has spent time working on proposals or other projects. PIs should also be aware that once effort has been certified, no changes to the effort report are allowed.

Accurate effort reporting requires certification of effort by the proper individual. A PI, supervisor, or an employee performing work on the sponsored project are most often the appropriate individuals to certify effort. In general, anyone certifying effort for an employee must possess first-hand technical knowledge of all of the employee's certifiable effort (i.e., work performed on sponsored projects). Unless an individual has knowledge of all an employee's effort, it is impossible for that person to make an accurate assessment of the effort the employee contributed to a particular research project.

As part of the system improvements, PIs will be able to create a more recognizable title for the research project. Employees will then be able to certify their own effort more easily because they will be able to identify the project by the name which appears on the effort report.

The federal government instituted effort reporting as a requisite to federal research funding. Effort reporting provides the means to verify that salaries and wages charged to sponsored research projects reflect the effort contributed to those projects. It is the effort reporting system which generates the documentation necessary to confirm that the labor charged to sponsored research is reasonable and accurate. A sponsoring agency has the right to perform an audit at any time to ascertain whether effort certifications are accurate and complete. Adverse findings in such an audit could have seriously damaging effects on sponsored research programs. Negative audit results could also lead to financial and criminal penalties for the University and/or individuals responsible for the project being certified.

The effort reporting system modifications include development of compliance monitoring procedures to verify that effort is being correctly certified. These procedures will help the PI oversee effort reporting and correct errors long before the University or the PI is placed at risk. ORTTA will conduct interviews with certifying employees and will perform periodic audits of departments' effort reporting procedures as a federal audit team would. This will help the PI and ORTTA work together to perfect effort reporting pro-

**UNIVERSITY OF MINNESOTA - SPONSORED PROJECT EMPLOYEE SUMMARY REPORT
FISCAL 1995 QUARTER 1**

The purpose of this report is to have principal investigators verify that the employees listed below performed work on this sponsored project during the quarter. Principal investigators are required to sign and return this report to the Department Effort Coordinator within 30 days of receipt. If any changes are necessary (e.g. adding or deleting names), note the change on this report and submit it to the Department Effort Coordinator to ensure the appropriate adjustments are made to quarterly effort reports and/or payroll.

Principal Investigator: **Smith, John R.**
Area: **630**

Payroll Account		CUFS Account			Sponsored Account Title		
Fund	Dept.	Fund	Area	Org.	Agency Name	Grant Number	CUFS Account Title *
0694	5654	1743	629	6084	NIH	05111111	D91-012 BAY W 6228/LOVASTATIN

* This column represents the name of the sponsored account in the Effort Reporting System. If you would like to change the name of the account for effort reporting purposes to enhance project recognition, indicate the name in the space provided in order for the Effort Coordinator to notify ORTTA.

Please Change CUFS Account Title (For Effort Reporting Purposes Only) To: _____
(not to exceed 56 characters)

Employees Paid From This Account Include:	Payroll Class Name	Effort Report Sent To Area	- For Information Purposes Only -				% of Total Certifiable Quarterly Pay
			Pay From This Account				
			July	August	September	Total	
BLUE, JOHN M.	RES ASSOC	630	\$2,250	\$2,250	\$2,250	\$6,750	80%
GREEN, JANE S.	RES ASSOC	635	1,900	1,900	1,900	5,700	50%
ORANGE, TIM M.	TU SR LAB TECH	630	600	1,500	1,500	3,600	100%
PURPLE, LINDA L.	ASSISTANT PROFESSOR	635	3,500	0	0	3,500	33%
RED, VIOLET V.	RESEARCH ASSISTANT	630	1,090	1,100	1,100	3,290	100%
YELLOW, ARNOLD S.	STUDENT LAB TECH	630	0	0	600	600	75%
Total Salary & Wages			\$9,340	\$6,750	\$7,350	\$23,440	

I verify that the employees listed above worked on this project during the quarter. Failure to complete this report may result in punitive actions as noted in federal and University of Minnesota policies.

PRINCIPAL INVESTIGATOR SIGNATURE: _____ DATE: _____

Sample of Tentative Effort Report Form

cedures and minimize compliance risks to the University and to PIs.

The new reporting system has been formed as an aid to the PIs. The process has been streamlined and simplified, but the PIs must understand certain elements of the system. These include:

- PI roles and responsibilities as stated in the *Effort Reporting Policies, Procedures, and Instructions Manual*.
- The purpose of proper effort certification and the consequences of incorrect certification.
- Administration of effort certification within the PI's department.

- Definitions and use of cost sharing (both mandatory and voluntary) as described in the *Manual*.
- The purpose of improvements to the effort reporting system and how these affect PI roles.
- Agency requirements for PIs certifying their own effort.

ORTTA is ready to offer any assistance necessary to help PIs understand the importance and function of the new effort reporting system. Questions about effort reporting specifics should be directed to the Effort Reporting HelpLine at 625-7824.

State Government and University Will Connect Counties to Internet

Extension Service offices in 60 Minnesota counties will be wired into the Internet over the next 18 months. Called "Access Minnesota," the project won a \$425,000 grant from the U.S. Department of Commerce National Telecommunications and Information Administration. The project was initiated by the University of Minnesota and the Minnesota Extension Service, on behalf of a partnership of state organizations.

The grant will be used to establish "community routers" in 60 county extension offices, providing direct connections to the Internet and the National Information Infrastructure. Extension staff or other community members will provide help in using the public terminals. The ultimate goal is public access to the Internet for all 87 Minnesota counties. The project will build on and extend the capabilities of MNet, Minnesota's public-sector backbone network serving state agencies, higher education and local government.

"I am very proud of the strong partnership between state government and the University of Minnesota," said Governor Arne Carlson.

"I am very proud of the strong partnership between state government and the University of Minnesota," said Governor Arne Carlson, "and the unprecedented collaboration with local government, the nonprofit sector and the state's other educational institutions."

Don Riley, the University's associate vice president for information technology, will coordinate Access Minnesota. "People shouldn't be shut out of the information age because they don't have the money or because of where they live," he said.

In addition to the federal grant, more than \$1 million in matching funds are committed to the project by members of the partnership, including the University, the Extension Service, the Minnesota Department of Administration, the Minnesota Information Policy Office, Minnesota Public Radio (MPR), Twin Cities Public Television, Dakota County, Minneapolis and St. Paul United Way, Northwest Minnesota Initiative Fund, Minnesota Department of Education, Technology and Information Educational Services, MRNet, and Sci/Math Mn Inc.

Additional demonstration projects will connect 10 school districts and some public libraries. Community health and human services information will be provided over the network, and MPR and Twin Cities Public Television will offer dial-in access to their members.

National Institutes of Health National Institute of General Medical Sciences Moved

On October 7, 1994, the staff of the National Institute of General Medical Sciences (NIGMS) moved to the new William H. Natcher Building on the main NIH campus. The new mailing address is:

NIGMS, NIH
45 Center Drive MSC 6200
Bethesda, MD 20892-6200

Telephone and fax numbers have changed as well.

On October 1, 1994, NIGMS implemented a reorganization. The reorganization was undertaken to enhance NIGMS's effectiveness and efficiency in supporting basic biomedical research and research training, as well as to align its organizational structure and position titles with those of other NIH institutes. The reorganization was not intended to reflect changes in NIGMS support for specific areas of science; in fact, the grant portfolios managed by individual program administrators will remain essentially the same.

For additional information, contact the Office of Research Reports at 301/496-7301.

From The NIH Guide October 7, 1994

3M Biosciences LARS and the 3M Library Staff are proud to present a seminar led by the staff educators from the Animal Welfare Information Center (AWIC).

This seminar will be open to all interested personnel involved in animal research.

Pertinent topics will include an overview of the Animal Welfare Act and the information requirements of the Act, a review of the alternative concept, a comprehensive introduction to NAL, AWIC and other organizations, instruction on the use of existing information databases/networks. There will also be literature searches demonstrated and some useful updates on internal protocol requirements and suggestions.

**This workshop will be offered
November 30, 1994, from 8:00 - 4:00
at 3M Company in St. Paul.**

The organizers would like to encourage all investigators, study coordinators, study directors and technical personnel to attend this workshop.

Advance registration is requested.

For more information call Jill Hart at 733-8586.



Four new grant administrators joined ORTTA last month: (from left) Liz Dawson, Lynn VanOverbeke, Debra Elvine and Carl Anderson.

Etcetera

Jim Curtsinger of Ecology, Evolution and Behavior will speak to the National Academy of Sciences symposium this month in Irvine, California. Titled "Frontiers of Science," the symposium presents 16 speakers on eight "hot" topics. Curtsinger will present his work in the genetics of aging in *Drosophila*.

J. Iija Siepmann, Department of Chemistry, has received a Camille and Henry Dreyfus New Faculty Award. The award provides \$25,000 to support his investigation of new approaches for simulating complex fluids, with applications to phase equilibria, organic films, adsorption in zeolites and metal-electrolyte interfaces.

To support research and doctoral programs on urban issues and economic development, the U.S. Department of Housing and Urban Development (HUD) has created an Office of University Partnerships.

About \$274 million of NIH's funds for peer-reviewed extramural research goes for the indirect cost of building use and depreciation, another \$760 million goes toward building operation and maintenance, an NIH official told Washington Fax, a commercial news service, on September 26. Those figures, said the official, account for about a quarter of indirect costs, which average 54 percent across the country. The University of Minnesota's standard rate is 45 percent.

Grants Assistant Dawson helps with proposals, grants and contracts with the Minnesota Department of Transportation, the U.S. Environmental Protection Agency, and NSF funding for the Institute of Technology. She has previously done accounting work in the Departments of Medicine and of Civil and Mineral Engineering, and ORTTA's effort reporting and indirect cost divisions.

Grants Assistant VanOverbeke works with the U.S. Department of Health and Human Services and with voluntary health organizations, such as the American Heart Association. She worked in the accounting division of ORTTA for the last year and a half, and before that was an accountant in the Department of Psychiatry.

Grants and Contracts Administrator Elvine deals with Minnesota Technology, Inc., 3M, and other commercial business and industry for all university departments outside of health sciences. She comes to the University after working 15 years at Honeywell, Inc., chiefly in its contract management department.

Grants Assistant Anderson also works with the U.S. Department of Health and Human Services and with voluntary health organizations. He previously spent 28 years working for Unisys Corporation, most recently as a financial pricing analyst in the contracts department.

Graduate School News

Fulbright and Other Foreign Grants

The purpose of the Fulbright program is to increase mutual understanding between people of the United States and other countries through the exchange of people, knowledge and skills. Approximately seven hundred grants are available to visit over one hundred countries. Applicants are asked to outline study plans or research projects that can be completed in one academic year and that relate to the resources of the host country. Applicants must have proficiency in the written and spoken language of the host country, must be U. S. citizens and must have earned a bachelor's degree or its equivalent before their participation in the program.

University of Minnesota applicants are interviewed by an internal faculty committee; their applications are then forwarded to the Institute of International Education for further review by the National Screening Committee. Following are the recipients from the University of Minnesota for 1994-95.

Fulbright Recipients

Stacy Nan Shira Beckwith Country: Israel
Major: Comparative Literature
Advisers: Prabhakara Jha and Harvey B. Sarles

In her thesis, Ms. Beckwith examines how Israel is imagined as a nation through its composing and reading of literature and history. Her approach involves textual analysis of literary production and reception, in addition to consultation with authors and critics. She aims to create an integrated study of how the major segments of indigenous society, including mainstream Israelis, Sephardim (Levantine Jews) and Israeli-Palestinians, view Israel as a single and/or compound nation. Her finished thesis will encompass views and styles of articulation from both Eastern and Western Israeli backgrounds and will employ a comparative approach that is especially relevant to current interest in how a nation is conceived over time and in the course of various imaginings.

W. Douglas Catterall Country: The Netherlands
Major: History Adviser: Stanford E. Lehmberg

Focusing on the cities of Utrecht and Rotterdam during a key phase in the Netherlands' modernization, 1630-1700, Mr. Catterall's study will demonstrate the contribution of English and German immigrants to one of the functions of official urban authority: maintaining public order. The study centers on the rules and norms for regulating behavior that could be generated by non-native as well as native groups independently of official discourses. To gain a community-wide perspective of public behavior's con-

struction, the study will follow the process through the daily practices of the groups in their localized settings (neighborhood and congregation), the role of localized ties and codes of conduct in immigrant use of the lower municipal commissions for civil suits, and the official practices for defining public behavior through the city court and city council.

Seth Patrick Hartigan Country: Czech Republic
Major: History Adviser: Department of History

Mr. Hartigan will participate in the Central and East European Studies Program offered by the Vysoka Skola Economicka Praha (University of Economics, Prague). This program explores the historical impetus of recent political, social and economic change in the Czech Republic and Eastern Europe. Close coordination between the program's faculty and the faculty of other universities in Prague will allow Mr. Hartigan to focus his independent studies on such issues as how the former Czechoslovakia was able to carry out a peaceful dissolution of its government (the "Velvet Revolution") while similar political changes in the former Yugoslavia prompted a bloody civil war.

Scott Andrew Homler Country: Morocco
Major: French Adviser: Judith Preckshot

In Morocco, Mr. Homler will consult with students and educators, access unpublished dissertations and attend university seminars in order to evaluate the extent to which Maghrebian Francophone literature is representative of post-colonial Moroccan literature as a whole. Because the authenticity of a French-language writer in an Islamic society is perpetually in jeopardy, it is important to evaluate the viability of a growing body of literature that, despite varying degrees of cultural, geographical and linguistic alienation, seeks to contribute to and potentially influence Moroccan conception of self. To this end, Mr. Homler will study the degree to which Maghrebian literature has enabled literate Moroccans especially to better conceive of and participate in their national culture.

Elizabeth B. Jones Country: Germany
Major: History Adviser: Mary Jo Maynes

Focusing on relationships between the agricultural economy and gender relations in rural Saxony between 1900 and 1930, Ms. Jones will examine the negotiation of power within the household and how women's participation in either wage labor on large rural estates or as unpaid family workers on small family farms shaped women's social, po-

[Next Page]

Graduate School News

litical and cultural identities. By exploring women's work, she hopes to extend the focus of peasant studies beyond an emphasis on legal and political relationships between peasants and landlords to include the study of economic and social ties within the rural family, which should also contribute to an understanding of the ways work shaped class, gender and generational identities in the countryside. Ms. Jones will solicit women's oral testimonies in addition to examining the rich archival sources in the region.

Elizabeth P. Klages Country: Denmark
Major: Political Science Adviser: W. Phillips Shively

Since 1973, the right-wing extremist Progress Party in Denmark has maintained a consistent presence in the national parliament, with support reaching as high as 15.9 percent of the vote. Ms. Klages seeks to understand where this support comes from and the reasons behind individuals' decisions to vote for this party. This should be of particular interest because Denmark provides an exception in regard to the type of person traditionally supportive of such parties. Ms. Klages will conduct a panel study, establishing through a general survey instrument a pool of respondents large enough to be representative, but small enough to enable her to conduct personal interviews. She will also interview various political leaders and specialists in this area.

Kris E. Lane Country: Ecuador
Major: History Adviser: Stuart B. Schwartz

Although much has been written on the subject of *mestizaje*, or race mixture, in colonial Latin America, few works present the views of the mestizos themselves, indigenous peoples, slaves, and free persons of color. Mr. Lane seeks to address questions of how these persons defined *mestizaje*, whether they viewed it differently from elites, and whether they manipulated elite legal definitions of race or ethnicity for their own advantage. He will study archival materials from the 17th to the 19th centuries in Ecuador that involve petitions for mestizo status by individuals threatened with tributary and other obligations required of "indios." He hopes to determine how the terms of the petitioners' arguments may have changed over time, as the population of colonial Ecuador became more mixed and official categories failed to apply.

Tracy Lavezzi Country: Australia
Major: Astrophysics Adviser: John M. Dickey

[Research description not available.]

Eric McEntyre Country: New Zealand
Major: Food Science Adviser: R. Gary Fulcher

Among cereal crops, barley contains the highest amount of beta-glucans, structural components of endosperm cell walls. Mr. McEntyre is interested in identifying genetic strains of barley that have either high- or low-molecular-weight beta-glucans, the former being preferred for human cereal consumption, the latter for malting and brewing. Because New Zealand is a leader in barley genetics, breeding and malt production and takes novel approaches to food processing issues, Mr. McEntyre plans to establish molecular weight and viscosity profiles for beta-glucans in selected malting barleys developed in New Zealand, using high-performance liquid chromatography and viscometry.

Mark G. Tjoelker Country: Poland
Major: Forestry Adviser: Peter B. Reich

Mr. Tjoelker will undertake a cooperative field study to investigate the nature and effects of industrial air pollutants on forests, focusing on Scots pine, which is the dominant tree species in Poland and throughout Europe and Asia and is sensitive to air toxins. In 1984, a number of research plots containing Scots pine populations of diverse origins were established in Poland near industrial point sources of air pollutants. Together with Polish scientists, Mr. Tjoelker will investigate the productivity of Scots pine populations growing in several of these heavily polluted environments, compare and contrast population variation among polluted sites, and test the hypothesis that physiological dysfunction and decreased growth at polluted sites are related to nutrient imbalances.

Jennifer Warren Country: Germany
Major: German Adviser: Department of German, Scandinavian and Dutch

Ms. Warren, who has a B.A. in German and history, will serve as a teaching assistant in English as a second language in Germany. Although she is now certified to teach English as a second language, she will use her experience in Germany to pursue licensure as a teacher of German and English as a second language. Having been a student of various languages for many years, she feels she can demonstrate to students the practical uses of English and help them use it outside the classroom through books, periodicals, film and music. She will also engage in independent reading and research on instructional methods, fine-tune her German, and acquire teaching aids.

(Next Page)

Graduate School News

DAAD (German Academic Exchange) Recipients*

Sydney Norton Country: Germany
Major: German Adviser: Richard W. McCormick

In her dissertation, Ms. Norton explores the development of German modern dance in the context of other artistic and intellectual movements of the Weimar period (1914-1933). Her goal is to trace pre-fascist sentiments inherent in Weimar Expressionistic dance into the Nazi period. These sentiments include health, strength, uniformity and the sacrifice of individual freedom for unity of purpose. By applying contemporary aesthetic theory to her analysis of German dance, Ms. Norton will examine how this art form was functionalized by National Socialists as a means of aestheticizing or rendering beautiful the Nazi State. She will study with a scholar of Weimar culture living in Berlin, who will also assist her in gaining access to relevant archival materials.

Michelle Mouton Country: Germany
Major: History Adviser: Mary Jo Maynes

Ms. Mouton will investigate how German parents and children in Westphalia, Germany, accepted and challenged German family policy between 1918 and 1945. This period was chosen because the welfare state developed during the Weimar Republic and because family policy changed dramatically when the National Socialist regime came into power. One question she will explore is how German state agencies defined motherhood and what guidelines governed their decisions to intervene in families. She will examine the continuity and change in national family policy in its local implementation to determine how much actually changed in practical terms for women. To this end, she will use national state policy decisions and local case histories, demographic and budget records, personal narratives and oral histories from archives, and interviews.

* DAAD awards are a part of the Fulbright program and are made by the same process.

NSF Renews Engineering Centers

The University's Center for Interfacial Engineering (CIE) recently passed a sixth-year review, and the NSF renewed the center's funding for another five years. Also reviewed and renewed is the Center for Plasma-Aided Manufacturing at the University of Wisconsin-Madison, which funds research at the University of Minnesota.

The Minnesota and Wisconsin centers are two of four Engineering Research Centers to be renewed, according to a mid-September announcement from NSF. Six additional centers are to be established or reestablished. The centers "couple engineering and scientific disciplines to focus on next-generation technological advances . . . the foundation for innovation in U.S. industry." They operate as partnerships among academe, industry, NSF and state governments.

CIE, directed by Professor D. Fennell Evans, has been awarded \$13 million for 1994 through 1999. The center was created in 1988. It studies molecular structure and behavior at interfaces between materials. According to NSF, understanding and control of such interfaces is vital to microelectronics; photographic, optical and magnetic films; alternative energy sources; and pollution control. CIE's research covers thin-film processing, coating processes, polymer microstructures, self-assembly processes and biomedical materials.

CIE emphasizes technology transfer and education. CIE's industrial sponsors send employees to the University for three to 12 months at a time to collaborate on research with faculty and students—graduate and undergraduate. CIE and its industrial partners also conduct workshops and short courses. Industrial scientists help design curricula, teach courses and advise graduate students.

The plasma engineering center at Madison has collaborated with the University's High-Temperature Laboratory, directed by Professor Emil Pfender, since 1988. Part of the Department of Mechanical Engineering, the lab investigates thermal plasma processing for melting and smelting metals; and synthesis, sintering and spraying of high-technology ceramics and refractory materials.

Grant Writing Workshop

November 11 and 18

172 Child Development Building

\$125.00

Call Debbie Warhol 626-1156

Sponsored by Division of General Pediatrics and
Adolescent Health

National Institutes of Health
1995 Appropriations for Health Research

	Fiscal 1994 Actual spending	Fiscal 1995 President's request	Fiscal 1995 Approved by House	Fiscal 1995 Approved by Senate	Fiscal 1995 Signed by the President
NCI.....	\$ 1,863,514,000	\$ 1,967,709,000	\$ 1,919,419,000	\$ 1,919,419,000	\$ 1,919,419,000
NHLBI.....	1,222,903,000	1,266,961,000	1,259,590,000	1,259,590,000	1,259,590,000
NIDR.....	158,089,000	163,776,000	162,832,000	162,832,000	162,832,000
NIDDK.....	705,616,000	731,500,000	726,784,000	728,784,000	728,284,000
NINDS.....	608,545,000	630,443,000	626,801,000	628,801,000	628,301,000
NIAID.....	520,792,000	542,864,000	636,416,000	536,416,000	536,416,000
NIGMS.....	851,566,000	882,189,000	877,113,000	877,113,000	877,113,000
NICHD.....	498,455,000	516,736,000	513,409,000	513,409,000	513,409,000
NEI.....	281,879,000	292,022,000	290,335,000	292,022,000	291,600,000
NIEHS.....	258,641,000	267,955,000	266,400,000	267,955,000	267,566,000
NIA.....	418,639,000	433,701,000	431,198,000	433,198,000	432,698,000
NIAAA.....	176,160,000	182,498,000	181,445,000	181,445,000	181,445,000
NIDA.....	281,825,000	291,963,000	290,280,000	290,280,000	290,280,000
NIMH.....	526,262,000	545,223,000	542,050,000	544,050,000	543,550,000
NIAMS.....	220,409,000	228,413,000	227,021,000	229,021,000	228,521,000
NCRR.....	270,532,000	286,394,000	294,877,000	294,877,000	294,877,000
NINR.....	46,574,000	48,326,000	47,971,000	48,326,000	48,237,000
NIDCD.....	161,316,000	167,129,000	166,155,000	167,129,000	166,886,000
NCHGR.....	127,112,000	152,010,000	152,010,000	152,010,000	152,010,000
Fogarty.....	12,825,000	13,745,000	15,193,000	13,209,000	14,697,000
NLM.....	115,237,000	135,330,000	123,274,000	127,274,000	126,274,000
AIDS Research.....	1,297,115,000	1,379,052,000	1,337,606,000	1,337,606,000	1,337,606,000
Other.....	313,647,000	347,061,000	333,844,000	328,415,000	332,487,000
TOTAL NIH.....	\$ 10,937,653,000	\$ 11,471,887,000	\$ 11,322,023,000	\$ 11,333,181,000	\$ 11,334,098,000

Research Animal Resources

Rate Changes for Animal Care

Effective January 1, 1995, per diem rates for all species provided by Research Animal Resources will increase 7 percent.

Effective July 1, 1995, per diem rates for rodents housed in shoebox-type cages will be based on a box charge according to the following schedule:

Cage Size	Cost/Box/Day		
	Conventional Housing	Isolator-Barrier Housing	Autoclaved Isolator-Barrier Housing
Large ¹	\$ 0.70	\$ 0.80	\$ 1.60
Small ²	0.30	0.35	1.30

¹Approximately 10"x19"; 3 rats, 12 mice, 8 hamsters or 8 gerbils, maximum.

²Approximately 7"x11"; 5 mice or 3 gerbils, maximum.

Lead Poisoning

(Continued From Page 1)

based paint and some with lead plumbing. Most every road between downtown and the south metro area passes through it, and it used to choke on the leaded gasoline. There is lead in its walls, its soil, its water, its house dust, and its children. According to the Minneapolis Health Department, "nearly every structure in Phillips contains lead in amounts believed to place children at risk."

Lead poisoning is a "reportable" disease. When you take your infant to the doctor, and the doctor draws blood, you often get an assay for blood lead, whether you know it or not. When the Minneapolis Health Department learns that your infant carries too much lead, it may well write an "abatement order," meaning you have to leave your home until someone finds the money to clean the place up—about \$15,000, just for the interior. To abate all the leaded homes in Phillips would cost about \$37.5 million. On top of that, the standard methods stir up so much lead that abatement can do more harm than good.

The Phillips Neighborhood Lead Collaborative has hit on another option that is worth a try. Making Phillips *lead free* isn't possible, so the Collaborative will teach some Phillips residents to be *lead safe*—to clean up the dust, flush the pipes, wash the baby's hands after she crawls on the floor, and eat plenty of iron and calcium because that discourages lead absorption.

The idea is sound enough that the U.S. Centers for Disease Control has just provided \$1 million to try it for three years. Of some 500 mothers and children, preferably recruited during the first trimester of pregnancy, half will receive a thorough education in lead safety over the course of three years. The teachers will be "peer teachers" recruited among the subjects' neighbors. The curricula will be tailored and translated to accommodate Southeast Asians, Hispanics, African-Americans, American Indians and Europeans. The subjects' exposure to lead will be monitored by lab analyses of soil, water, paint and dust. Quarterly blood tests will indicate whether the education works. When a blood test leads to an abatement order, the Collaborative will provide shelter for the family.

The CDC grant has the University's and Deinard's names on it, as well as Elsa Shapiro, Diane Corrin, Catherine Jordan and Becky Yust of the University. The clinic Deinard runs is in Phillips, and he and colleagues will provide statistical expertise, administrative resources, and help with recruiting, curricula and teacher training. But the project belongs to the Collaborative, whose other members are Phillips Neighborhood residents and business people with no professional connection to the University. The idea was the Collaborative's, the protocol was written with the Collaborative's consensus, and the research subjects are the

Collaborative's friends and neighbors. (For a list of collaborative members, see side bar, next page.)

"The neighborhood has identified a problem, sought out consultation, and if we succeed, solved the problem—all by itself," says Deinard. "The University people are consultants to the neighborhood." Some people in the Collaborative have suggested that Deinard and his fellow "suits" are no longer consultants; they are "part of the family" now. But Deinard does not want that role. "I don't want to get in a position where someone says we've become controlling, taking advantage of them. I want to make sure the control stays with them."

From the University hospital on the East Bank, the Community-University Health Care Center (CUHCC) is about a quarter-mile down river to the Franklin Avenue Bridge, then a mile across the river and west on Franklin. It's a new, one-story building, across from the Minneapolis American Indian Center and set back off the main street, behind Mike's Frame Service and Peterson Fire and Safety Equipment. CUHCC was created in 1966, at the state legislature's suggestion, and the University put it in Phillips because it seemed needed there. In 1991, CUHCC's first building came down and the new one went up. "This building was supposed to last eight years, and we've outgrown it in two and a half," says Deinard.

Deinard and Gust met on a Friday afternoon, shortly after CUHCC moved into the new building. "Susan and two others from the neighborhood walked in here unannounced and for two hours really chewed me out for not doing enough for the neighborhood," Deinard remembers. "I pointed out that half our patients were from Phillips and the contiguous neighborhoods. 'That's not enough,' was the response. I didn't dismiss them. If the clinic can do more than just see patients, then they were right. But they had to think of the problem. I wasn't about to presume the problem and then discover nobody else resonated to it. So we parted company in late '91, and I didn't hear from Susan again until February of 1993."

Gust recalls going to that 1991 meeting with Deinard for two reasons: One, she's louder than the two partners who brought her; "I'm from Pittsburgh, not Minnesota, and my passion is about this far from my skin." Her gesture indicates a hair's breadth. Two, she'd been studying community activism in relation to institutions and wanted to "cut her teeth" on a small clinic before she went to "some of the bigger players, like Abbott Northwestern.

"It was a confrontational type of meeting," she recalls. "Amos's feet were to the fire. We challenged him with the argument that this clinic is attached to a huge University that probably gets money because of us. There aren't that many people-of-color neighborhoods in Minnesota, and there isn't anybody as poor as we are—that's got to attract federal dol-

The Phillips Neighborhood Lead Collaborative

A Partial List of Members

Becky Yust, Assistant Professor, Department of Design, Housing and Apparel

Catherine Winter, Phillips Resident; Member, People of Phillips

Elsa Shapiro, Assistant Professor, Department of Neurology; Director, Pediatric Neuropsychology Unit

Jeff Roy, Staff Member, Pillsbury Neighborhood Services, Waite House

Leslie Robison, Professor, Department of Pediatrics; Director, Division of Pediatric Epidemiology/Clinical Research

Darin Packard, Phillips Resident; Member, People of Phillips

Jenny Kim, Graduate Student, Health Care Administration, School of Public Health

Mary Ellen Kaluza, Phillips Resident; Member, People of Phillips

Catherine Jordan, Post-Doctoral Fellow, Institute for Disabilities Studies and Division of Pediatric Neurology and Neuropsychology

Keith Johnson, Phillips Resident; Member, People of Phillips

Gwendolyn Hill, Phillips Resident; Member, People of Phillips

Susan Gust, Phillips Resident and Small-Business Owner; Member, Board of Directors, Phillips Community Initiatives for Children; Member, People of Phillips

Bill Gropel, Brand Manager, The Valspar Corporation

Star Grigsby, Phillips Resident; Member, People of Phillips

Ray Frellsen, Coordinator/Manager, Honeywell Neighborhood Improvement Program

Marc Flores, Phillips Resident; Member, People of Phillips

Carol Flavin, former Lead Organizer, People of Phillips

Amos Deinard, Associate Professor, Department of Pediatrics; Director, Community-University Health Care Center (CUHCC)/Variety Club Children's Clinic

Doc Davis, Housing Coordinator, People of Phillips

Diane Corrin, Extension Educator, Hennepin County, Minnesota Extension Service

Karen Clark, State Representative

lars. So how are we being used by the University to fatten the coffers? Amos was defensive, and he had good reason to be defensive. But he was also visibly moved and concerned. He told us 'Come back with a specific problem.'"

To make a long story short, the Collaborative finally came together in 1993 over an attempt to save Phillips children from lead poisoning.

When infants ingest lead, it interferes with the incorporation of iron into hemoglobin. It is stored in bones, and later released. It may pass from mother to fetus, causing the fetus to be "pickled *in utero*," as Deinard puts it. It's most detrimental effects concern the central nervous system. The scientific literature suggests that, in children, lead damages whatever neurostructures are developing at the time of the lead exposure, thus lowering IQ by four to eight points. The treatment for severe cases is "chelation"—the introduction of chemicals that bind to the lead and encourage bodies to excrete it.

Gust reports that lead brings stomach aches, behavior problems, whining, passivity, learning disabilities; in severe cases deafness, convulsions, mental retardation, mental illness. She has so thoroughly taught her granddaughter about washing her hands that it's now one of the two-year-old's favorite things about visiting Grandma.

The common wisdom in Phillips says that 50 percent of the children suffer from lead poisoning, that is, blood levels over 10 micrograms per deciliter (10 ug/dl). When Gust argued that 50 percent figure to Deinard, she remembers, "Amos kind of went up a flagpole, because throwing statistics around with no factual base just makes him crazy."

The 50 percent figure comes from a biased sample, says Deinard, who estimates that 30 percent of the neighborhood's children reach levels of 10 ug/dl. "But unfortunately the state health department has no good data to disprove the 50 percent contention," he says. "We went to the state health department, only to find that what they had was incomplete."

The Collaborative fights lead poisoning on several fronts: The education program that the CDC just funded; similar education proposals to the U.S. Maternal and Child Health Bureau (MCH), the National Institute of Environmental Health Sciences and the Legislative Commission on Minnesota Resources; a companion proposal to NIH and MCH for study of lead's affect on neuropsychology; focus groups and translators to create educational materials, funded by

{Next Page}

Lead Poisoning

(Continued From Previous Page)

the Minnesota Extension Service; a quarter million dollars from the city for the "safety net" for families evicted by city abatement orders; funds for recruiting and help with housing from the Honeywell Foundation; a partnership with the Heart of the Beast Puppet Theater to teach hand washing in day care centers.

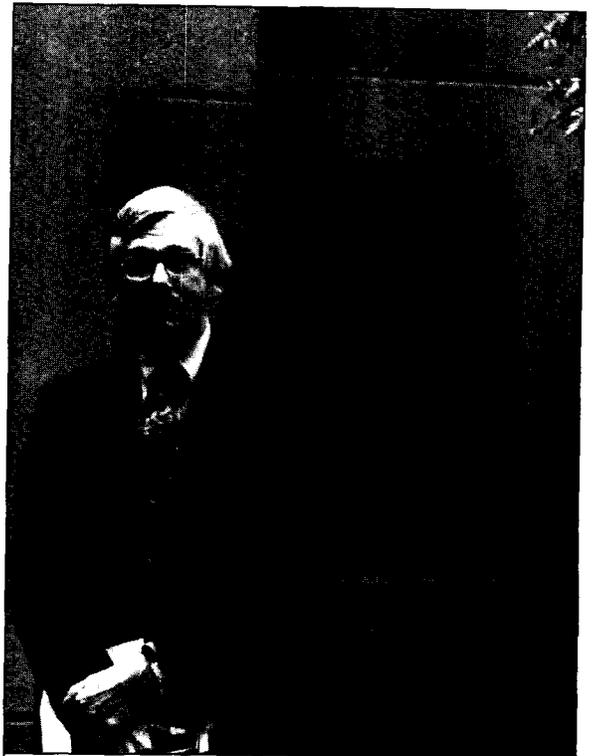
For the education program, "we'd like to do a four-year study, not three," says Deinard. "We've got 90 percent of the dollars in hand." As this article goes to press, the U.S. Maternal and Child Health Bureau is in town to visit Phillips and decide about the other 10 percent.

The education project has a pretty clear-cut goal: to see if intensive, cultural-specific education can maintain blood-lead levels below 10 mg/dl in young children. In the proposal to the CDC, the Collaborative took great pains to defend the research protocol with regard to the control group, the 250-some children whose blood lead will be monitored, but whose families will not receive any out-of-the-ordinary education about lead safety. Under the heading "Potential Confounds and Threats to Validity" the proposal acknowledges the problem of "educational contamination," meaning that information about lead safety will no doubt reach the control group. But, says the Collaborative, that information will not come as steadily, as accurately, or as culture-specifically as it does to the experimental group.

Teachers will work one-on-one in the homes of the experimental group every two weeks for the first six months; then there will be small-group instruction every three weeks for the next half-year; then quarterly reminder sessions for the rest of the study. The teaching will address sources of lead, its effects on children, the interpretation of blood tests, nutrition to combat lead, reducing exposure to leaded paint, dust and soil by means of cleaning, hygiene and home and yard maintenance. Literature will be printed in Spanish and four Asian languages. Some Asian families also asked for fact sheets in English aimed at the children, because they are the family members most likely to read English. There will be Hispanic cooking classes, because that's what the Hispanics asked for. The Africans prefer to meet in small public groups, rather than individually in their homes.

Another confounding factor is that some children in both study groups will suffer elevated blood levels, and when that happens, something must be done. The Collaborative cannot simply sit tight and watch in order to compare steadily worsening levels of lead poisoning, control vs. experiment, over the course years. The solution is to compare the number of children whose blood lead reaches a certain threshold, and to compare the peak levels in each child, numbers that will remain significant even when homes are remodeled and children get medical help as a result of their having reached those thresholds and peaks.

Such are the necessary compromises when one's experimental subjects are people. It took the Collaborative some time



Amos Deinard, member of the Phillips Neighborhood Lead Collaborative and director of CUHCC, the University hospital's clinic in Phillips.

to reach consensus. It was "a little bit of a squabble," says Gust, "never ugly."

"It took us two meetings to convince the Collaborative that we need a control group," says Deinard. "They thought if education is good, than it ought to be for everybody. They had to understand that what we're trying hasn't been tested. We could have made last fall's Maternal and Child Health deadline but we didn't have full concurrence with what we were proposing."

"I can remember the meeting," says Gust. "It was winter-time, my cheeks were burning, I was one of two Phillips residents regularly attending. The researchers were talking about the research they were going to do. We were feeling 'Well, what's going to happen to these families?' They said, 'We're going to research it.'"

"At the next meeting we told the folks, 'Pure science is not the neighborhood's priority. There's not going to be any blood taken until safety nets are in place. We're not going to prevent the control group from reading the newspaper or calling anyone they want to. Children will be tested ahead of time, and a child with an elevated lead level is not going into the control group.' If it means compromising the data," says Gust, "that's a risk we'll take. These are people, not canaries."

If the Phillips residents seem a little cynical and wary of the suits, consider how it might look from the corner of Bloomington and Franklin. "The idea of lead-safe education in culturally specific strategies is one of the smartest things since slicing bread with machines," says Gust. "Suddenly researchers were in our midst, all but salivating to get their hands on the subjects and what it will do for resumes and credentials."

"I've got more requests," says Deinard, "to have students over here, people wanting to volunteer, people wanting to work here, than I've got places for them. 'We want to see what the real world's like before we go out in to it,' they say."

When the cynicism goes away, and the outsiders have a sincere desire to help, there's still a problem. Even the kindest help readily touches sore spots in a neighborhood struggling to fend for itself, find its self-respect, and to gain others' respect. "This neighborhood needs empowerment and opportunity, not more people doing it for us," as Gust puts it. "We've been defined as a deficit, so we tend to act like a deficit—I'm really poor, I need your money; I'm really sick, I need your health care. We put this Collaborative together with the intention that we recognize this neighborhood for its resources and value."

That's why Deinard is so set on remaining a consultant, on keeping the control with the Phillips Neighborhood residents. That's why active residents with no conventional professional role in the Collaborative are nonetheless paid a stipend; they are employed *consultants*. That's why residents will go to work as the Collaborative's drivers, secretaries, translators, peer teachers, and lead-abatement contractors.

And that's why Deinard and Gust are glad they've learned to collaborate. "I'm really taken with the whole experience," says Deinard. "We could have probably put this grant together, and sold it to a few people in Phillips, and maybe gotten a little participation. But I think we have a much greater likelihood of succeeding because we've got the neighborhood with us, because they can say to their colleagues, 'This is *our* project.' It would be nice to live long enough to see whether this and what may follow may make a difference in this neighborhood."

For her part, Gust calls herself and Deinard the "yin and yang" of the Phillips Neighborhood Lead Collaborative. "He and I are totally opposite in how we problem solve, in what perspectives we're coming from. Sometimes I know we drive each other absolutely nuts," she says. "But in other ways we have incredible similarities. In our passion—we demonstrate it very differently—but we both have this love of children and passion for justice."

By Phil Norcross

NIH Proposes Federal-Funding Oath on Patent Applications

To "help ensure that the federal investment in patents is preserved," NIH Director Harold Varmus has proposed that patent applications require a disclosure "under oath" of whether federal funding contributed to the invention. He also proposed a mechanism whereby NIH could easily search PTO records for inventions the government helped fund.

NIH grant recipients are now required to notify NIH about any patent applications emerging from their research, but an investigation by the Department of Health and Human Services found that grantees routinely fail to comply.

In the incident that spurred recent Congressional interest in the matter, the NIH said it knew of only five patents belonging to Scripps Research Institute but connected to NIH funding. Later investigations, however, showed that Scripps had reported to the Patent and Trademark Office (PTO) a government role in 51 patents and failed to report a governmental role in 45 patents.

Varmus acknowledged that releasing information about patent applications could conflict with confidentiality requirements at PTO, but he noted that PTO has backed legislation to make information from applications available 10 months after they are filed.

Varmus made his proposal to Bruce Lehman, head of PTO.

From *Washington Fax*

University Receives NSF Infrastructure Awards

In October, NSF announced \$106 million in Academic Research Infrastructure awards to 214 colleges and universities. The University received three of the awards:

Gary Gardner, head of Horticultural Science, received \$740,500 for modernization and replacement of controlled-environment growth chambers.

Marvin Bauer of Forest Resources received \$315,000 for facilities for enhancing and linking spatial analysis and modeling.

Ahmed Sameh, head of Computer Science, received \$550,000 to acquire a workstation cluster for high-performance computing.

Altogether, this round of awards to acquire or develop new instrumentation range between \$100,000 and \$2 million. The success rate was 43 percent of 429 proposals. Awards to help modernize facilities range from \$100,000 to \$2 million. The success rate was 25 percent of 285 proposals.

■ National Science Foundation

Minority Support

The mandate of the National Science Foundation (NSF) to promote excellence in science and engineering includes concern for the quality, composition, distribution and effectiveness of the human resource base in those broad domains. Because members of certain minority groups—Black, American Indian, Alaskan native (Eskimo or Aleut), Hispanic or Native Pacific Islander—are underrepresented in all disciplines, a number of activities are directed toward increasing their numbers as full participants in the mainstream of research. ORTTA has received announcements and program descriptions for three such programs:

Minority Research Planning Grants (MRPG): These one-time grants enable eligible minorities who have not had prior independent federal research support to develop a competitive research project. MRPGs are limited to \$18,000 total costs for a period of up to 18 months. Institutional cost-sharing is encouraged. The MRPG coordinator may be reached at 703/306-1603. Deadlines vary according to disciplinary program. (Announcement 94-147.)

Minority Career Advancement Awards (MCAA): Through this effort, eligible minorities may undertake one-year enhancement projects to increase their research capability and productivity. Awards are limited to a maximum of \$50,000, possibly with up to \$10,000 for equipment, if required, and are usually for 12 months. Deadlines vary according to disciplinary program. The MCAA coordinator may be reached at 703/306-1603. (Announcement 94-147.)

Minority Postdoctoral Research Fellowships: The goal of the program is to prepare minority scientists for positions of scientific leadership in academia and industry. To attain this goal, the program provides opportunities for postdoctoral training of the highest quality to recent minority Ph.D.s. The program has other special features that address particular needs of these young scientists.

- Travel awards to meet prospective sponsoring scientists.
- Workshops for sponsors and fellows.
- Starter research grants.

The annual deadline for Minority Postdoctoral Research Fellowships is the first Friday in December (**December 2, 1994**). Travel Award applications must be received no later than 3 months before the travel. For information regarding biological sciences, call 703/306-1469; for social, behavioral and economic sciences, 703/306-1733. (Announcement 94-133.)

Copies of the announcements are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ National Science Foundation

Presidential Faculty Fellows

The National Science Foundation (NSF) seeks nominations of tenure-track faculty members who have excelled in both research and educational activities, for the FY95 Presidential Faculty Fellows (PFF) awards. Through the PFF awards, the President of the United States recognizes the scholarly activities of some of the nation's most outstanding science and engineering faculty members, and their potential for leadership in academic pursuits. Awards are intended to allow fellows to undertake self-designed, innovative research and teaching projects, to establish research and teaching programs, and to pursue related activities early in their academic careers.

PFF awards carry a grant of \$100,000 per year for five years. Each year no more than 30 awards are made, 15 in engineering disciplines, including materials and computer and information science, and 15 in science disciplines, including the social, behavioral and economic sciences.

To be eligible for a Presidential Faculty Fellow award nominees must: 1) be U.S. citizens, nationals or permanent residents as of November 30, 1994; 2) have a doctoral degree (Ph.D. or equivalent) awarded between January 1, 1987, and November 30, 1994; 3) hold a tenure-track, tenured or equivalent position at the nominating institution by November 30, 1994, and *must not* have begun such a position at any eligible institution prior to January 1, 1991; and 4) be conducting research in an NSF-supported field.

Nominations for PFF awards *must* be submitted by the institution's chief academic officer, such as the president, the chancellor or the provost. Nominations submitted by department heads or deans will not be accepted.

The application deadline is **November 30, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Presidential Faculty Fellows (PFF) Awards, National Science Foundation, 4201 Wilson Boulevard Room 907, Arlington, VA 22230; 703/306-1697. The announcement number is 94-134.

■ U.S. Department of Education

Graduate Assistance in Areas of National Need

The U.S. Department of Education continues its program entitled "Graduate Assistance in Areas of National Need." This program provides fellowships to assist graduate students of superior ability who demonstrate financial need. The purpose of the program is to sustain and enhance the capacity for teaching and research in areas of national need.

The Department of Education will give absolute priority to applications that propose to provide fellowships in one or more of the following areas of national need: biology, chemistry, computer and information sciences, engineering, mathematics and physics.

Eligible applicants are academic departments of institutions of higher education. Education will grant an estimated 50 awards averaging \$225,000 for a project period of up to 36 months. The maximum fellowship stipend for the academic year 1995-1996 is \$14,400.

The application deadline is **December 2, 1994**. For further information contact Dr. John E. Bonas, U.S. Department of Education, Division of Higher Education Incentive Programs, 600 Independence Avenue SW, Portals Building Suite C80, Washington, D.C. 20202-5329; 202/260-3265; internet johnnybonas@ed.gov; fax 202/260-7615.

■ Arms Control and Disarmament Agency

William C. Foster Fellows Visiting Scholars Program

The U.S. Arms Control and Disarmament Agency (ACDA) will conduct a competition for selection of visiting scholars to participate in ACDA's activities during the 1995-96 academic year. The purpose of the program is to give specialists in the physical sciences and other disciplines relevant to the Agency's activities an opportunity for active participation in the arms control, nonproliferation and disarmament activities of the Agency and to gain for the Agency the perspective and expertise such persons can offer.

Visiting scholars will be detailed to ACDA by their universities; the universities will be compensated for the scholar's salary and benefits. Scholars will also receive reimbursement for travel to and from Washington, D.C., for their one-year assignment and either a per diem allowance or relocation costs.

Visiting scholars must be citizens of the U.S., on the faculty of a recognized institution of higher learning, and tenured or on a tenure track or equivalent; they also must have served as a permanent career employee of the institution for at least ninety days before selection for the program.

To apply, candidates are asked to submit a letter outlining their interests and qualifications, a curriculum vitae, copies of two publications, and additional supporting material such as letters of reference.

The application deadline is **January 31, 1995**. To request an information brochure, please write to Visiting Scholars Program, Office of Operations Analysis and Information Management, Room 5726, U.S. Arms Control and Disarmament Agency, 320 21st Street NW, Washington, DC 20451; or call 703/302-7714.

■ Department of Energy

Pre-Freshman Enrichment Program (PREP)

The Office of University and Science Education Programs of the U.S. Department of Energy (DOE) is accepting grant applications from colleges and institutions of higher education that will support the development of programs and approaches to encourage underrepresented populations in science-based careers. The primary purpose of the program—Pre-Freshman Enrichment Program (PREP)—is to alleviate manpower shortages in science, engineering and math careers by preparing and guiding students entering sixth through tenth grades (not having completed the tenth grade) in the selection of college-preparatory courses in science, mathematics and engineering.

PREP projects are required to have a summer component and an academic year component. The summer component must be no less than four continuous weeks, reaching a minimum of 24 students who must participate for all four weeks. The academic year component should provide enough time for meaningful follow-up. Typically, PREP grantee institutions work collaboratively with local school districts, local industry, students' parents and peers to ensure success. Program elements may include, but are not limited to, interdisciplinary approaches to teaching science and mathematics, the use of role models and field trips, and students' active participation in hands-on activities.

DOE expects to make several two-year grants limited to a maximum of \$21,000 each year. DOE funds should be matched by at least 50 percent from private industry and the university.

The application deadline is **November 15, 1994**. For further information contact John Ortman, Program Manager, Office of University and Science Education, ET-32, U.S. Department of Energy, 1000 Independence Avenue SW, Washington, DC 20585; 202/586-8949. Refer to Program Notice 95-03.

■ National Institute of Standards and Technology

Precision Measurement Grants Program

The National Institute of Standards and Technology (NIST) is continuing a program of research grants called Precision Measurement Grants, available to scientists in U.S. academic institutions for significant, primarily experimental, research in the field of precision measurement and fundamental constants.

There is considerable latitude in the kind of research projects that will be considered for support; the key requirement is that they are consistent with NIST's mission in the field of basic measurement science. For example:

- Experimental and theoretical studies of fundamental physical phenomena to test the basic laws of physics or which may lead to improved or new fundamental measurement methods and standards;
- The determination of important fundamental physical constants;
- The development of new standards for physical measurement of the highest possible precision and accuracy.

In general, proposals for experimental research will be given preference over proposals for theoretical research because of the greater expense of experimental work. Proposals from workers at the assistant and associate professor level who have some record of accomplishment are especially encouraged in view of the comparative difficulty aspiring researchers have in obtaining funds.

Two new awards will be funded in the amount of \$50,000 for one year with the option (by NIST) of renewing for an additional two years.

Abbreviated proposals must be received by **February 1, 1995**, with a concise, descriptive title outlining the *objectives* of the proposed research, the *motivation* for the research, and the general *technical approach* to be followed. Semifinalists will be notified by March 24, and final proposals will be due **May 8, 1995**. Prospective candidates are urged to contact NIST (see below) before preparing their abbreviated proposals.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. Barry N. Taylor, Chair, NIST Precision Measurement Grants Committee, Building 245 Room C229, National Institute of Standards and Technology, Gaithersburg, MD 20899-0001; 301/975-4220.

■ U.S. Information Agency

Federalism in Russia Partnership Program

The Office of Citizen Exchanges of the United States Information Agency's Bureau of Education and Cultural Affairs announces an open competition for an assistance award program.

Public or private nonprofit organizations may apply to develop training programs which foster permanent professional and political partnerships between Russian regional governments, institutions, political leaders and their American counterparts. The program is designed to increase the commercial, economic, educational and political ties between Russia and the U.S. at the regional level.

Projects should examine the roles of national and regional governments that exist in a federated system of government and focus on the tasks, responsibilities and obligations charged to each. General program content will vary depending on the regions involved. Issues of interest might include but are not limited to: 1) the balance of power between federal and regional governments; 2) communication and coordination between regional and federal governments; 3) regional economic development and management; and 4) regional resource management and environmental policy. Projects should reflect the issues shared by the American and Russian regions.

Priority will be given to projects that produce tangible, management results, i.e., a federalism curriculum for a Russian institute/university, development of a regional association, development of a center/institute within an existing Russian institution to study regional issues, development of Russian and American business/commercial links, etc.

The application deadline is **December 7, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Office of Citizen Exchanges, E/PN Room 216, U.S. Information Agency, 301 4th Street SW, Washington, DC 20547; 202/619-5326, fax 202/619-4350.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary		
	Number	Amount
Proposals Submitted		
September 1994	361	\$ 44,135,965
Awards Processed		
September 1994	319	33,401,775
Proposals Submitted		
July 1994 - September 1994	854	155,470,102
Awards Processed		
July 1994 - September 1994	908	100,286,835
Proposals Submitted		
July 1993 - September 1993	875	127,620,183
Awards Processed		
July 1993 - September 1993	726	64,123,226

Alcohol, Phospholipid Hydrolysis, Cell Growth Regulation	
Zoltan Kiss, Hormel Institute	NIH, NIAAA \$149,942 - 07/01/94-06/30/95
A Public-Private Partnership for a Healthy Minnesota	
Nicole Lurie, Public Health	Medica Foundation \$93,005 - 06/01/94-08/31/95
National Research Service Award - Institutional Grants	
John Kralewski, Institute for Health Services Research Robert L. Kane, Institute for Health Services Research Agency for Health Care Policy and Research	\$186,102 - 07/01/94-06/30/95
Family Care of the Oldest Old: a 5-year Panel Study	
Rosalie A. Kane, Institute for Health Services Research	NIH, NIA \$200,120 - 07/01/94-06/30/95
Maternal Diet and Risk of Brain Tumor in Children	
Lawrence Kushi, Human Development and Nutrition	NIH, NCI \$52,860 - 05/13/94-02/28/95
Contaminant Transfer in the Lake Michigan Lower Pelagic Foodweb	
Deborah L. Swackhamer, Environmental and Occupational Health Edward A. Nater, Soil Science	Environmental Protection Agency \$203,729 - 06/13/94-07/13/96
Traineeships for Students in Schools of Public Health	
Edith D. Leyasmeyer, Public Health	HRSA, Bureau of Health Professions \$48,451 - 07/01/94-06/30/95
Impact of Health Care Reform on the Pharmaceutical Marketplace	
John M. Coster, Pharmacy Practice Stephen Schondelmeyer, Pharmacy Practice	Retired Persons Services, Inc. (AARP) \$22,000 - 08/01/94-12/31/94
Cost-Effective Quality: Improving Client Outcomes	
Muriel B. Ryden, Nursing Mariah Snyder, Nursing Kathleen Krichbaum, Nursing	NIH, NCNR \$233,329 - 09/01/94-08/31/95

Muscle Cell Division in the Mature Extraocular Muscles	
Linda McLoon, Ophthalmology	National Science Foundation \$48,848 - 08/15/94-07/31/95
Double-Blind, Parallel Extension Trial to Evaluate Long-Term Safety and Efficacy of Subcutaneous Recombinant Human Ciliary Neurotrophic Factor in Patients with Amyotrophic Lateral Sclerosis	
Gareth Parry, Neurology	Synergen, Inc. \$108,475 - 05/01/94-03/31/95
Mechanisms of Brain Protection from Focal Cerebral Ischemia	
Costantin Iadecola, Neurology	American Heart Association, Inc \$132,000 - 07/01/94-06/30/97
Retroviral Marking and Long-Term Expansion of Human Stem Cells	
Catherine M. Verfaillie, Medicine	NIH, NHLBI \$217,810 - 08/10/94-07/31/95
Negative Regulatory Effects of Stroma-Progenitor Contact	
Catherine M. Verfaillie, Medicine	NIH, NHLBI \$198,066 - 08/01/94-07/31/95
The Effect of Age on Ventricular Bioenergetics, Blood Flow	
George Haidet, Medicine	American Heart Association, Inc \$132,000 - 07/01/94-06/30/97
Evaluation of Active Compression-Decompression CPR in a Mini-Pig Model of Ventricular Fibrillation	
Keith Lurie, Medicine	American Heart Association, Inc \$132,000 - 07/01/94-06/30/97
Platelet Factor 4 Modulation of Thrombomodulin Activity	
Arne Slungaard, Medicine	American Heart Association, Inc. \$132,000 - 07/01/94-06/30/97
G-Proteins and Opioid Receptor Functions	
Ping Law, Pharmacology	NIH, NIDA \$218,959 - 08/01/94-06/30/95
Molecular Roles of Heparan Sulfate Proteoglycans (HSPGs) in Cardiac Left-Right Development	
Joseph Yost, Cell Biology and Neuroanatomy	American Heart Association, Inc. \$132,000 - 07/01/94-06/30/97
Development of Specific Gene Probes to Giardin Species Strain Identification to Resolve Zoonotic Origin of Waterborne Giardi	
Stanley L. Erlandsen, Cell Biology and Neuroanatomy	Environmental Protection Agency \$115,000 - 07/25/94-07/24/96
Hormonal Control of Hepatic Gluconeogenesis/Glycolysis	
Simmon J. Pilkis, Biochemistry (MS)	NIH, NIDDK \$464,393 - 09/01/94-08/31/95
Structure/Function Relationships of Human Glucokinase	
Simmon J. Pilkis, Biochemistry (MS)	NIH, NIDDK \$181,967 - 09/01/94-06/30/95

Law School Clinical Experience Program - Family Law Clinic

Stephen Befort, Law School

U.S. Department of Education
\$80,240 - 07/01/94-06/30/95

Aggrecol Test-Module Project

Louis F. Goldberg, Underground Space Center
Raymond L. Sterling, Underground Space Center
Greengrove Corporation
\$60,000 - 08/15/94-06/30/95

NASA Graduate Student Researchers Program Proposal

J. Woods Halley, Physics and Astronomy
National Aeronautics and Space Administration
\$22,000 - 07/01/94-06/30/95

Film Cooling: Experiences and Computation

Suhas V. Patankar, Mechanical Engineering
Terrence W. Simon, Mechanical Engineering
National Aeronautics and Space Administration
\$40,165 - 07/01/94-06/30/95

Ultrafine Aerosol Size Distributions

Peter H. McMurry, Mechanical Engineering
U.S. Department of Energy
\$92,000 - 08/01/94-07/31/95

Experimental and Computational Studies of Film Cooling with Compound Angle Injection

Richard J. Goldstein, Mechanical Engineering
Clemson University/DOE prime
\$219,180 - 07/01/94-06/30/95

Determination of Fiber Preform Permeability at Edges and Corners

Jeffrey H. Vogel, Mechanical Engineering
Chris Macosko, Chemical Engineering and Materials Science
USDOD, Army
\$130,000 - 07/01/94-06/30/95

Geostatistical Models of Long-Range Oil Migration: an Example from the Paris Basin, France

Mark Person, Geology and Geophysics
Hans-Olaf Pfannkuch, Geology and Geophysics
American Chemical Society - Petroleum Research Fund
\$49,953 - 06/01/94-08/31/96

Geologic Investigations Applicable to Groundwater Management

David L. Southwick, Geology and Geophysics
Anthony Runkel, Minnesota Geological Survey
Rochester MN Public Utilities
\$50,000 - 07/15/94-07/14/95

Problem Formulation and Numerical Algorithms for Highly Oscillatory Mechanical Systems

Linda Petzold, Computer Science
USDOD
\$75,000 - 09/01/94-08/31/97

Stresses in Steel Curved-Girder Bridges

Theodore V. Galambos, Civil Engineering
Jerome F. Hajjar, Civil Engineering
St of MN, Department of Transportation
\$70,818 - 08/15/94-08/30/96

In Situ Bioremediation of Aquifers by Introduced Bacteria

Daryl F. Dwyer, Civil Engineering
Environmental Protection Agency
\$115,596 - 08/08/94-08/07/96

Base Stable and Composite Ceramic Supports for High Performance Liquid Chromatography (HPLC)

Peter W. Carr, Chemistry
NIH, NIGMS
\$285,516 - 08/01/94-07/30/95

Homogeneous-Heterogeneous Combustion: Thermal and Chemical Coupling

Lanny D. Schmidt, Chemical Engineering and Materials Science
U.S. Department of Energy
\$130,000 - 07/01/94-06/30/95

Incorporating the Astronomical Plate Scanning (APS) Catalog of the Sky Survey (Poss I) and Image Archive in Astrophysical Data Systems (ADS)

Roberta M. Humphreys, Astronomy
Stephen C. Odewahn, Astronomy
Greg Aldering, Astronomy
National Aeronautics and Space Administration
\$73,989 - 08/08/94-08/07/95

Imaging in the Crab Nebula

Kris Davidson, Astronomy
National Aeronautics and Space Administration
\$41,206 - 06/01/94-05/31/96

Studies of Trajectory Synthesis Methods and Trajectory Sensitivity in Air Traffic

Yiyuan Zhao, Aerospace Engineering and Mechanics
National Aeronautics and Space Administration
\$74,364 - 06/15/94-06/14/95

Aerodynamic Dissemination

Daniel D. Joseph, Aerospace Engineering and Mechanics
Gordon S. Beavers, Aerospace Engineering and Mechanics
USDOD, Army
\$147,059 - 07/15/94-07/14/95

Bush Faculty Development on Excellence and Diversity in Teaching

Carol Carrier, Curriculum and Instruction
Bush Foundation
\$638,950 - 07/01/94-06/30/97

Southeast Asian Family Support Program

Amos S. Deinard, Community University Health Care Center
Minneapolis Foundation
\$20,000 - 07/01/94-06/30/95

Philanthropy and the Nonprofit Sector

William A. Diaz, Humphrey Institute
Ford Foundation
\$458,550 - 04/01/94-03/31/97

Spatial Modeling of Forest Ecosystems and Bird Species Diversity

Yosef Cohen, Fisheries and Wildlife
National Science Foundation
\$200,000 - 05/01/94-10/31/97

A Psychological and Medical Study of Twins Reared Apart

Thomas J. Bouchard, Jr., Psychology
David T. Lykken, Psychiatry
Elke D. Eckert, Psychiatry
Pioneer Fund
\$115,455 - 07/01/94-06/30/95

Familial Nature of Eye Tracking and Schizotypy

William M. Grove, Psychiatry
NIH, NIMH
\$259,638 - 08/01/94-07/31/95

Credit and Business Cycles

Nobuhiro Kiyotaki, Economics
National Science Foundation
\$32,966 - 06/01/94-05/31/95

Replication and Dissemination of a Technical Model to Prevent Challenging Behavior in Young Children

Mary McEvoy, Educational Psychology
Joe Reichle, Communication Disorders
U.S. Department of Education
\$132,500 - 09/01/94-08/31/95

Teacher Mentoring Program for Beginning Teachers

Barbara M. Taylor, Curriculum and Instruction
Independent School Districts
\$346,523 - 07/01/94-08/31/95

Videomicroscopy and Microinjection Studies of Maize Meiocytes

Susan M. Wick, Plant Biology
National Science Foundation
\$59,999 - 05/15/94-04/30/95

Regulation of Asymmetric Flagellar Waveforms

Paul A. Lefebvre, Genetics and Cell Biology
NIH, NIGMS
\$140,872 - 08/01/94-07/31/95

The Hydroxylamine Oxidizing System of Nitrosomonas

Alan B. Hooper, Genetics and Cell Biology
National Science Foundation
\$90,000 - 06/01/94-05/31/95

Changing the Academic Agenda on Crime and Punishment: Knowledge Shifts in the Study of Crime and Criminal Justice

Joachim J. Savelsberg, Sociology
National Science Foundation
\$48,728 - 09/15/93-02/28/96

Intelligent Vehicle/Highway Systems (IVHS) Research

Dennis Foderberg, Center for Transportation Studies
St of MN, Department of Transportation
\$1,358,000 - 01/03/94-06/30/95

Video Project—Post Traumatic Stress Disorder in Cambodians

Amos S. Deinard, Community University Health Care Center
Medtronic Foundation, Abbott Northwestern Hospital
\$36,200 - 01/01/93-12/31/94

Resolution Following Acute Lung Injury

Peter B. Bitterman, Medicine
NIH, NHLBI
\$807,001 - 12/30/93-11/30/94

Study on the Effect of Orlistat in the Treatment of Obese Subjects with Non-Insulin-Dependent Diabetes Maintained on Oral Hypoglycemic Agents

Michael W. Steffes, Laboratory Medicine and Pathology
Hoffmann-La Roche, Inc.
\$128,370 - 12/01/93-11/30/95

Colorimetric VOC Sensors

Kent Mann, Chemistry
E.G. & G. Idaho, Inc.
\$147,755 - 12/21/93-12/31/94

Health Care Services for Low Income Persons of Hennepin County

Amos S. Deinard, Community University Health Care Center
Hennepin County
\$64,644 - 01/01/94-12/31/94

Family Planning Special Project

Amos S. Deinard, Community University Health Care Center
St of MN, Department of Health
\$143,942 - 01/01/94-12/31/95

Citizenship, Public Ethics, and Practical Learning

Edwin Fogelman, Political Science
James Farr, Political Science
Harry C. Boyte, Humphrey Institute
Ford Foundation
\$350,000 - 10/01/93-06/30/96

Wild Rice Breeding and Germplasm Improvement

Raymond Porter, North-Central Agricultural Experiment Station
U.S. Department of Agriculture
\$133,005 - 10/01/93-04/11/96

U.S. EPA Lead-Based Paint Worker Training Program

Jeanne Ayers, Public Health
University of Cincinnati
\$11,912 - 10/01/93-09/30/94

Three-Dimensional Nonlinear Cyclic Analysis of Concrete-Filled Tube Beam-Columns and Composite Subassemblies

Jerome F. Hajjar, Civil and Mineral Engineering
National Science Foundation
\$100,000 - 9/15/94-08/31/97

The Effect of Composite Floor Behavior on the Failure of Steel Moment-Resisting Connections

Roberto T. Leon, Civil and Mineral Engineering
Jerome F. Hajjar, Civil and Mineral Engineering
National Science Foundation
\$65,000 - 09/15/94-08/31/95

Mechanisms of Allograft Rejection

Patricia E. Birk, Pediatrics
S. Michael Mauer, Pediatrics
Kidney Foundation of Canada
\$26,970 - 07/01/94-06/30/95

Nitric Oxide in Experimental Pulmonary Hypertension

Vaclav Hampl, Medicine
American Heart Association, Minnesota Affiliate
\$23,525 - 07/01/94-06/30/95

Regulation of Na,K-ATPase Gene Expression During Hyperoxia

Christine Wendt, Medicine
David H. Ingbar, Medicine
NIH, NHLBI
\$85,320 - 07/01/94 - 06/30/95

Mapping and Isolation of a Gene for Spinocerebellar Ataxia

Laura P.W. Ranum, Laboratory Medicine and Pathology
Larry Schut, Laboratory Medicine and Pathology
Muscular Dystrophy Association
\$36,867 - 07/01/94-12/31/94

Bender Software Workplan

Kim A. Stelson, Mechanical Engineering
General Motors Corporation
\$30,000 - 07/01/94-12/31/94

Sensor Management

Avner Friedman, Mathematics and Its Applications
USDOD, Air Force
\$30,000 - 05/01/94 - 12/31/94

Mass Spectrometric Pa-231 Dating of Carbonates

Lawrence Edwards, Geology and Geophysics
American Chemical Society, Petroleum Research Fund
\$50,000 - 08/01/94 - 08/31/96

Performance Evaluation Environment

Zhiyuan Li, Computer Science
David J. Lilja, Electrical Engineering
Computing Devices International
\$49,965 - 06/01/94-09/30/95

Investigations of Methane Oxidative Coupling

Robert W. Carr, Chemical Engineering and Materials Science
Amoco Production Company
\$30,000 - 07/01/94 - 12/31/94

Informational and Attentional Process in Schizophrenia

Joanna Katsanis, Psychology
National Alliance for Research on Schizophrenia and Depression
\$59,120 - 07/01/94-06/30/96

Defining Social Mastery Motivation in Young Children

Susan Hupp, Educational Psychology
Mary B. Boat, Educational Psychology
U.S. Department of Education
\$19,922 - 09/01/94-08/31/95

About the Sponsored Programs Information Network (SPIN)

The Sponsored Programs Information Network (SPIN) is a computerized locator system for funding opportunities (federal, nonfederal and corporate) for faculty and institutional research, development and education program support. It is available free of charge to University faculty and staff through ORTTA.

Based on a description of the research areas and/or the type of support sought, faculty and staff can search the Keyword Code Table and Award Type Table to identify codes for specific areas of interest. The Keyword Code Table, a taxonomy developed by SPIN to catalog funding sources, is divided into the following twelve major classifications:

- Agriculture/Food Sciences/Foods
- Arts/Humanities/Cultural Activities
- Behavioral/Social Sciences
- Education
- Energy
- Engineering
- Geographic Terms
- Health and Safety/Medical Sciences/Biomedical
- Law
- Management/Commerce
- Other (Any/All Disciplines)
- Science & Technology/Mathematics/Computer Science

The Award Type Table offers codes that will more specifically target the search results to the award type(s) sought. Some of the award types included in the Award Type Table are:

- Conference — Attend
- Fellowship
- Projects Outside the U.S.
- Publication
- Seed Money/Start-Up Funds
- Student Scholarship
- Training/Professional Development

The result of a search is a set of profiles of applicable funding sources that provides (1) the sponsor's name, (2) the sponsor's contact address and phone number, (3) deadline dates, (4) program titles, (5) objectives or interest areas of the sponsor, and (6) restrictions that would affect the submission of a proposal. This set of profiles is sent to the requestor.

ORTTA's gopher contains a section devoted to SPIN and offers you the opportunity to review the Keyword Code Table within the topics shown above to find keyword codes of interest. You then e-mail a note to the gopher editor (spin@ortta.umn.edu) requesting a SPIN search based on the chosen keyword codes (limit, 20 keywords) and award types (limit, 20).

Your search results will be sent by campus or regular mail. Please provide your name, address and also your phone number on the message in case ORTTA staff need to contact you for clarification. If the results of the search are not satisfactory, you may contact our office for further discussion and guidance in the selection of codes.

For further information regarding the SPIN system, please contact ORTTA through e-mail (spin@ortta.umn.edu) or call 624-9004.

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only) Voluntary Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Carl Anderson	626-8267	carl@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Sandra Kenyon	624-6026	
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort HELP Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu

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Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
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RESEARCH REVIEW

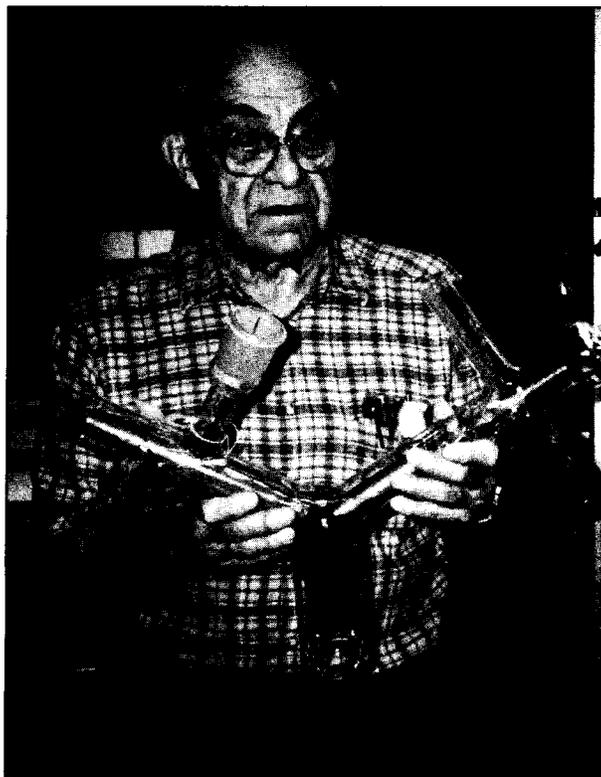
Office of Research and Technology Transfer

December 1994

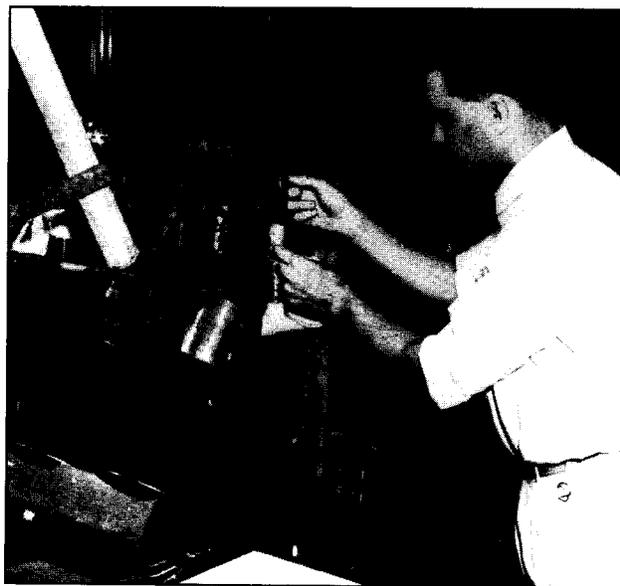
Remembering Al Nier: 'The best thing that ever happened to this place.'

The above quote from Al Nier's close friend and colleague Ed Ney aptly captures the feelings expressed on November 2, 1994, at a "Special Colloquium To Honor the Life of Regents' Professor Alfred O. C. Nier."

Nier died May 16, 1994, from injuries suffered two weeks earlier in an auto accident. Although he was nearly 83 and officially retired for 14 years from a career that began in 1935, Nier was returning



Al Nier, 1990 and 1940, with parts of the mass spectroscope he invented for separating ^{235}U from natural uranium.



home from a full day in his laboratory studying interplanetary dust particles. But he wasn't working all those years, colloquium attendees were reminded by G. J. Wasserburg, a long-time scientific collaborator of Nier's from the California Institute of Technology: "Al was not a real physicist; he was just having fun."

Al Nier had fun and distinguished himself in countless ways, commented President Nils Hasselmo: "His accomplishments embraced electrical engineering, physics,

(Continued On Page 11)

Inside

Frontiers of Biomedical Engineering at Minnesota	3
Biochemistry Department Hits Triple at NIH	4
New Grant Administrator and Accountant Codes on GDES	5
Human Subjects: Gender in Clinical Evaluation of Drugs	6
Animal Care: New Animal Policy	7
NCURA: Compliance Continued: What's Next?	8
Graduate School News	10
EPA Invites Comment on Proposed rDNA Rule	15
NIH: Peer Review Appeal Process	16
New Funding for New Facilities	16
NIAAA and NIDA: Application Triage	17
MPI: New Financing for Technology Research Collaboration	17
NIH: Streamlining the NIH Noncompeting Continuation	18
DHHS: Development of GrantsNet and The ORTTA Gopher	19
Program Information	20 - 23
Processing Type 38s	23
Faculty Research, Training and Service Awards	24 - 26

Template for BA 23 Form

The Office of Research and Technology Transfer and the Department of Epidemiology are working together on a pilot project involving the use of a computer-generated template for the form "Application for External Research, Training, and Public Service Support" or as it is commonly called, the BA 23 form. In this phase, the Department of Epidemiology will prepare its BA 23 forms using a template developed by its staff. This electronic BA 23 form will be used in place of the multipart form now obtained from University Stores. All procedures related to the BA 23 process, such as obtaining signatures from all department heads and deans, providing appropriate copies to all individuals, and bringing two copies of the BA 23 form plus all copies of the proposal to ORTTA for final review and transmittal to the sponsoring agency will still be maintained.

After testing this for a few months, we will evaluate the success of this project. We then hope to extend to other departments the opportunity to process BA 23 forms in this manner. We are interested in hearing from other departments who may have also worked on an electronic BA 23 form. Address your comments and suggestions to Winifred A. Schumi at 624-5750 or wschumi@ortta.umn.edu.



RESEARCH REVIEW

Volume XXIV/Number 6

December 1994

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; or Linda Lorenz, 624-6862**.

	07/01/94	06/30/95
Research		
On-Campus	45.00%	
Off-Campus *	24.00%	
SAFHL On-Campus	55.00%	
SAFHL Off-Campus	26.00%	
Hormel	45.00%	

Other Sponsored Activity		
On-Campus	30.00%	
Off-Campus *	24.00%	

Instruction		
On-Campus	50.00%	
Off-Campus *	26.00%	

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Students*	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	24.6%	36.3%	31.8%
7/1/96 - 6/30/97	24.9%	37.3%	32.7%

* Increase the indicated rates by 7.6 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertation; or if 2) the student is employed for more than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009**.

Rate changes will be reflected in this section.

Institute of Technology Forum

Frontiers of Biomedical Engineering at Minnesota

The first of three IT Forum luncheon programs was held October 20, 1994, featuring Professor Matt Tirrell, holder of the Earl E. Bakken Chair in Biomedical Engineering. Tirrell, professor in the Department of Chemical Engineering and Materials Science, directs biomedical interfacial engineering in the Center for Interfacial Engineering and directs the graduate program in biomedical engineering in the Biomedical Engineering Center. The Bakken Chair and Biomedical Engineering Center were established with the help of a \$2 million gift from the Medtronic Foundation. The interdisciplinary center promotes education and research, and interaction between University researchers and the Minnesota biomedical industry.

The following is an edited transcript of Tirrell's address:

I am going to talk about one aspect of the frontiers of biomedical engineering here at the University of Minnesota, the engineering of human tissue. This research is being pursued actively by at least half a dozen research groups with different goals in mind, including teams from the Health Sciences, Institute of Technology, and College of Biological Sciences, as well as people from the industrial technological community.

The strategies for transplanting or regenerating living functional cells or tissue to treat disease or traumatic injury are being developed to replace lost or genetically absent metabolic functions, for example, to replace liver or pancreas tissue or to repair or restructure damaged connective tissue such as cartilage, bone, skin, ligament, etc. Unlike fluid tissues, like blood, which we readily transplant by transfusion, or bone marrow, which are liquid tissues that are transplanted by intravenous injection, most types of other tissue necessary for these newer kinds of therapies that really get at trying to engineer and regenerate new tissue must be implanted or imbedded in some sort of support device or matrix.

This is one of the frontiers of bioengineering, to engineer a support or matrix to serve as a template to promote or guide or nourish regenerative cell growth. It provides a pattern for the physical shape of the new tissue that one is trying to regenerate or reconstruct. It provides mechanical support and also can provide an important role in either promoting or preventing mass transfer between the new growing organ or tissue and its surroundings.

Engineers are playing an increasing variety of important roles in the development of cell transplant devices. Effective implementation of these devices requires, among other things, new advances in materials synthesis, new advances in materials processing, control of mechanical properties, and new classes of soft composite materials. Also required are efficient mass transfer of oxygen and nutrients between the growing new tissue and the surroundings.

These are all problems that find themselves in the classical curriculum of many of our engineering disciplines in I.T. and in other engineering schools. Perhaps I am a little biased, but I feel that the materials science challenges are particularly important and exciting. What is needed is the

ability to recreate materials with the really remarkable properties that characterize human tissue. To date, to my knowledge, there are no manmade soft composite materials with properties spanning the unique range of properties that one finds in human tissue.

In fact, many of the popular trends in materials science sort of run counter to what you need in engineering tissue or in engineering materials for biomedical applications as a whole. Considerable materials science and materials engineering research is being expended to make materials that are tougher, stiffer, harder, more rigid, more resistant to high temperature. These aren't really what you need for biomedical applications. What's needed is a new spectrum of properties in tissue engineering and this is the kind of thing that excites me. We need materials that have mechanical integrity, but they should also have incredible flexibility, pliancy, conformability, extensibility, adhesiveness, and most importantly, functionality. You don't find chemical and biological functionality in many hard metals or ceramics.

It is, of course, no trick to make a material soft. But to make it soft while retaining interesting and excellent mechanical integrity is the real challenge, and that's of course what we have in natural tissue. Nature does it by making this kind of material that I'll keep referring to as "soft composite materials," and these are not simple composites like the fiberglass in your boat or something like that where you have fibers imbedded in a matrix. In most tissues there is a hierarchical scale of structures: macromolecules organize themselves into fibrils, these fibrils organize themselves into larger fibers, which in turn form cross-linked gels, and these cross-linked gels of collagen are the extracellular matrix which one has in native tissue, or which you have to supply in order to develop a viable matrix in which to regenerate tissue growth. The cells reside in these things not in a passive way, but they exert strong mechanical and chemical interactions with the matrix. These are some of the things we are trying to mimic. And I've been talking about these things in a purely mechanical way, but you have to add to that the biochemical metabolic function that you want in certain tissues, so this thing becomes very challenging.

And on top of all this, the development of this new class of bioartificial materials might soon pass from being not only a superb scientific and technological challenge, but more im-

(Continued On Page 12)

Biochemistry Department Hits Triple at NIH

When your credit is good, Visa doesn't make you pay your bill every single month. When your credibility is high, NIH doesn't make you submit a progress report every year. It trusts you, instead, for as long as five years between competing continuations.

Such is the case with three investigators in the Medical School's Department of Biochemistry. David Thomas and John Lipscomb were awarded NIH MERIT awards in 1994; Simon Pilkis brought his with him from SUNY, Stony Brook, when he became head of the department here last September.

A MERIT award (Method for Extending Research In Time) is NIH's way of saving investigators with proven records the trouble of annual noncompeting continuations. At the University of Minnesota, 23 faculty members in 13 departments currently have such awards.

Awardees are identified among applicants in standard NIH R01 grant competitions. One cannot apply for a MERIT award.

Professor Thomas seeks to understand the chemical mechanisms that make muscles move, and works largely by inventing and perfecting new methods of spectroscopy. His lab measures the motion of two muscle proteins, myosin and actin, and correlates their motion with events in the ATPase cycle that drives them. Pioneering techniques in spectroscopy, both optical and EPR (electron paramagnetic resonance, a.k.a. electronic spin resonance) are what make Thomas's lab tick. In EPR crystallography, single crystals of "spin-labeled" proteins are analyzed in magnetic fields. To study millisecond and microsecond events in muscle fibers, the lab uses pulses of laser light to release substrates, ATP for example, and thus trigger events relatively simultaneously throughout a sample. "Using this technology," says Thomas, "we have debunked the standard textbook molecular model of muscle contraction, substituting a new 'dynamic disorder' model."

For "Molecular Dynamics of Muscle Contraction," Thomas's award comes to about \$1.5 million for five years, plus indirect costs. Nine others work on the project with Thomas, including postdoctoral researchers Ewa Prochniewicz and Sam Ramachandran, and electronics engineer Robert Bennett, who designed and built most of the lab's pulsed-laser spectrometers.

Thomas earned his Ph.D. in biophysics at Stanford in 1976, where he was also an All-American wrestler. He joined Bio-

chemistry at the University in 1979 and is also a fellow of the Minnesota Supercomputer Institute. NIH has supported his "Molecular Dynamics" program since 1983. A second NIH-funded investigation by Thomas, "Biophysical Studies of [Muscle] Membrane Molecular Dynamics," has been continuing since 1980. A third NIH grant, "Transient Spectroscopy of Muscle," is being broken up and subsumed in the other two. The Muscular Dystrophy Association has also



Three University biochemists have NIH MERIT awards; from left, John Lipscomb, Simon Pilkis and David Thomas.

granted Thomas about \$300,000 for 1994-1997 for "Spectroscopic Probes of ATP-Binding Sites in Muscle."

Professor Lipscomb's lab investigates the structures and mechanisms of oxygenase enzymes, enzymes that make aerobic life possible by facilitating essential oxidation reactions with O₂ while preventing release of activated forms of oxygen that would damage organisms. The lab has focused on a representative set of iron-containing oxygenase enzymes which appear to be good systems for investigating the recognized types of oxygen-activation chemistry.

Lipscomb and colleagues have purified, crystallized and characterized the enzymes, and have developed working hypotheses as to their mechanisms. The lab's current studies combine crystallography, site-directed mutagenesis, kinetics and spectroscopy to relate the enzymes' structure and reactivity to hypothesized intermediates in their reaction cycles.

Lipscomb has described the importance of the work thus:

(Next Page)

Life in a sea of oxygen is possible because a quirk of the electronic structure of the oxygen molecule makes reaction with typical biomolecules a spin-forbidden process. Oxygenase enzymes exist to overcome the forbidden nature of the reaction in a controlled manner, thus allowing the underlying reactivity of oxygen to be utilized in a productive manner. . . . The reactions catalyzed by these enzymes impact a remarkable spectrum of fundamental life processes, ranging from synthesis of essential biomolecules and harvesting of energy from metabolic processes, to detoxification of our environment.

The MERIT award for "Oxygenase Enzyme Mechanism" provides for \$800,000 in direct costs over five years. Now in its 17th year, the project specifically addresses a class of oxygenases called "dioxygenases." It helps support four research assistants, a postdoctoral fellow and a junior scientist in Lipscomb's lab.

Lipscomb's dioxygenase work runs parallel to his other NIH-funded program, "Methane Monooxygenase [MMO] Structure and Mechanism," awarded about \$208,000 for 1994-1995. A *dioxygenase* breaks apart O₂ and inserts both atoms into organic substrates; a *monooxygenase* inserts one oxygen atom into a substrate and reduces the other to water. Studying both types of oxygenase at once means that "most aspects of O₂ activation and insertion chemistry can be addressed in our laboratory," writes Lipscomb.

Lipscomb earned his Ph.D. in biochemistry in 1974, at the University of Illinois, Urbana. He came to the University of Minnesota in 1975, as a postdoctoral fellow at the Gray Freshwater Biological Institute, then joined the biochemistry faculty in 1977. He codirects the University's new Center for Metals in Biocatalysis.

Professor Pilkis seeks to understand the molecular mechanisms in mammalian liver that control blood-glucose levels throughout the body. Understanding hormonal regulation of this portion of glucose metabolism may allow "metabolic pathway engineering" and gene therapy for disorders of glucose metabolism, such as diabetes.

Pilkis has evidence that several hormones, including insulin, modulate the action of the glucose-related liver enzymes. The lab has focused on a bifunctional, two-domain enzyme, 6PF-2-K/Fru-2,6-P₂ase; and on two related enzymes, 6PF-1-K and Fru-1,6-P₂ase. Hormonal control of gene expression for the three enzymes is being characterized, as are the genetic structures. The genes that encode these enzymes are being tested as "diabetes candidate genes."

The bifunctional enzyme, first discovered in Pilkis's lab, is the principal signalling enzyme in the glycolysis and gluconeogenesis pathways. By site-directed mutagenesis, Pilkis

is investigating the interdependence and reciprocal regulation of the two functional domains.

To study the structure, function and genetic and hormonal regulation of the enzymes, Pilkis uses x-ray crystallography, nuclear magnetic resonance, and expression of the enzymes in *E. coli*.

The MERIT award for "Hormonal Control of Hepatic Gluconeogenesis/Glycolysis" provides about \$650,000 for direct costs this year and next. Pilkis began the project in 1986, and it now supports six people besides Pilkis, including four who came with him from Stony Brook. Pilkis also has a \$180,000 grant this year from NIH for "Structure/Function Relationships of Human Glucokinase."

Pilkis was professor and chair in the Department of Physiology and Biophysics at SUNY, Stony Brook, from 1986 to 1994. Prior to that he was a faculty member and Howard Hughes Investigator at Vanderbilt University. He earned an M.D. and a Ph.D. in physiology at the University of Chicago in 1969.

By Phil Norcross

Research Animal Resources

"Mouse Wet Lab"

Hands-on instruction for laboratory manipulation of mice

January 10, 10:00 a.m.

Handling
Restraint
IV tail vein injections
IP injections
Gavaging
Orbital sinus blood collection

Pre-registration is required

Call Research Animal Resources at 4-9100

New Grant Administrator and Accountant Codes on GDES

New grant administrator codes were established in November. You can view the new codes by looking at the GCLS table in CUFS. You can also, as always, get the grant administrator's name when you are looking at a GDES record by leafing to GSUM.

New grant accountant codes were also established. You can view the new codes by looking at the GCAT table in CUFS.

These changes make it easier for ORTTA to update CUFS for staffing changes.

IRB: Human Subjects

Gender Differences in Clinical Evaluation of Drugs: New FDA Information

In a "Dear Colleague" letter to IRBs, the FDA recently clarified its guideline on the inclusion of women in drug trials. The letter is relevant to researchers planning clinical research. The University of Minnesota IRB implemented the FDA recommendations immediately.

Department of Health and Human Services
Food and Drug Administration

Dear Colleague:

The agency [FDA] has received a number of questions and comments related to the "Guideline for the Study and Evaluation of Gender Differences in the Clinical Evaluation of Drugs," which FDA published in the *Federal Register* on July 22, 1993. This guideline was developed amidst growing concerns that the drug development process did not provide adequate information about the effects of drugs in women and a general consensus that women should be allowed to determine for themselves the appropriateness of participating in early clinical trials.

In response to those questions and comments, I want to elaborate on those aspects of the guideline that may be important to institutional review boards as part of deliberations about protocols and ongoing surveillance of research. While the guideline addresses drug testing, its principles may also be applicable to the study of medical devices. The agency suggests that in reviewing planned investigations of medical devices, IRBs consider whether the principles of the guideline apply to the product under investigation and, if so, whether to include these principles in their review of the protocol.

The guideline presents several critical changes in FDA policy that should be reflected in drug protocols presented to IRBs. First, it lifts the restriction, articulated in a 1977 guideline, on participation by most women with childbearing potential from entering phase 1 and early phase 2 trials, and now encourages their participation. FDA believes that early drug trials can be safely conducted in women even before completion of all animal reproduction studies through protocol design that includes pregnancy monitoring as well as measures to guard against pregnancy during exposure to investigational drugs. Pregnancy testing is recommended, and women must be counselled about the reliable use of contraception or abstinence throughout the course of the clinical trial. The guideline does not, however, specify the type of contraception to be used because FDA believes that decisions of this nature are best left to the woman in consultation with her health-care provider in light of specific features of the product under study, the protocol, and the population under study. It is important that investigators have access to gynecologic consultants who can provide in-

formation about contraceptives and advice for study participants.

Second, the guideline states that sponsors should collect gender-related data during drug research and development and should analyze the data for gender effects in addition to other variables such as age and race. A characterization of drug effects by gender must now be part of all new drug applications (NDAs), and the agency may refuse to file an application that does not include these data. This expectation requires a fair representation of both genders as participants in clinical trials so that clinically significant gender-related differences in drug response can be detected. The guideline also underscores the importance of collecting pharmacokinetic data on demographic differences beginning in the phase 1 and 2 studies, so that relevant study designs are developed for later trials.

The guideline identifies three specific pharmacokinetic issues in women that should be considered when feasible: 1) effect on the stages of the menstrual cycle; 2) effect of exogenous hormonal therapy including oral contraceptives; and 3) effect of the drug on the pharmacokinetics of oral contraceptives.

A critical responsibility of the investigator and the IRB has always included ensuring that there is an adequate informed consent process for study subjects. When preclinical teratology and reproductive toxicology studies are not completed prior to the initial studies in humans, as is usually the case, male and female study subjects should be informed about lack of full characterization of the drug and its potential effects on conception and fetal development. All study subjects should be provided with new, pertinent information arising from preclinical studies as it becomes available, and informed consent documents should be updated when appropriate. Study subjects should also be informed about any new clinical data that emerge regarding general safety and effectiveness, including relevant gender effects.

In response to questions about the participation of women with life-threatening illnesses in early phases of drug development, it should be noted that FDA guidelines have never excluded women with life-threatening diseases from early

{Next Page}

University Animal Care Committee

New Animal Policy

The Office of the Provost of the Academic Health Center has established a new policy affecting the procurement of dogs and cats used in research or teaching programs on the Twin Cities campus. The policy has been adopted as part of recommendations made by the University Animal Care Committee, which recently completed a comprehensive review and evaluation of current practices involving the procurement of dogs and cats from USDA-licensed class B dealers. The study was performed in response to internal and external concerns about alleged illegal activities by class B dealers and the adverse consequences of these activities on University programs. With a view to maintaining the integrity and high ethical standards of the University's animal care and use programs, the new policy is as follows:

Policy: Implementation to begin December 1, 1994.

1. Within five years all dogs and cats used for University research and instructional programs will be purpose-bred.
2. During the interim, the University will continue to use random-source dogs and cats legally obtained from pounds and purchased from USDA class B dealers.
3. All dogs and cats purchased by the University must be accompanied by a certified statement which includes a description of the dog or cat and verification that the animal was purpose-bred or held at a pound for the required holding period.
4. Each dealer from which the University obtains animals will be required to submit photocopies of its latest

USDA inspection reports. The University will not purchase dogs or cats from any dealer with significant, recurring deficiencies on these inspection reports.

5. At its discretion, the University Animal Care Committee reserves the right to conduct inspections of facilities of dealers from whom the University obtains dogs or cats. These inspections will include all facilities, animal transport vehicles, animal husbandry and records. Significant deficiencies resulting from inspections may result in cancellation of purchase contracts.

The University Animal Care Committee emphasizes that all dogs and cats, regardless of procurement source, are thoroughly examined at the University for the presence of any marks or microchips which might identify an animal as a missing pet. We have been utilizing the latest scanner technology for the past year and a half to search each animal for an identifying microchip. Upon locating such a mark or a microchip, the University will make every effort to locate the owner and return the animal. The animal will not be utilized in any University program until the status of that animal has been verified and documented.

Moreover, the Committee urges all private pet owners to permanently identify their animals. This can be accomplished by requesting their private veterinarians to identify each animal with a tattoo or by having them insert a microchip containing all identifying data. Ω

Human Subjects

(Continued From Previous Page)

phases of drug development. The guideline, however, states that when a promising drug is under development to treat a life-threatening disease that affects both men and women, FDA may require participation by women during the initial phases of drug trials. FDA takes very seriously its commitment to access to trials for women with life-threatening conditions such as AIDS.

In summary, with the barrier to participation of women with childbearing potential removed, IRBs now have broader discretion to encourage the entry of a wide range of individuals into the early phases of clinical trials. FDA urges IRBs to examine carefully the study protocols under their aegis to see whether entry criteria needlessly exclude women or other groups in the target population of the drugs, or set up entry criteria that are difficult for women to meet.

Finally, IRBs should be aware that FDA guidelines represent current policy and describe FDA's expectations regarding inclusion of patients in drug development. FDA appreciates the cooperation of IRBs in assisting the agency to foster changes in product development that will promote the overall health of all people.

You are encouraged to contact the Office of Women's Health at 301/443-5691 or the Office of Health Affairs at 301/443-1382 for further information about the guideline.

Sincerely yours,

Linda A. Suydam
Interim Deputy Commissioner for Operations
U.S. Food and Drug Administration

Compliance Continued: What's Next?

By Fred Bentley

Director, Grants and Contracts, Office of Research and Technology Transfer

Reprinted with permission from the NCURA Newsletter (National Council of University Research Administrators), September/October 1994

For the past two summers, compliance has been on the minds of many NCURA members, as indicated by their attendance at two special summer conferences dealing with compliance. Last summer a group of members attended the first conference in Portland, Maine, entitled "Surviving Compliance: Policies and Practices for the '90s." The conference addressed issues related to dealing with humans and animals as research subjects, environmental health and safety issues, and misconduct, as well as how institutions provide staff support to deal with such issues. This summer members gathered in Seattle, Washington, to discuss and hear about issues related to financial compliance at a conference entitled "Compliance Continued: Financial Issues for Pre- and Post-Award Administrators." Both conferences gave a good deal of historical perspective as to how we got to where we find ourselves today, and what we might do to cope with making our lives easier as we deal frequently with these perplexing issues.

Why do universities find themselves with such negative reputations these days? We are probably faced with such difficulties as a result of letting others control our agenda, in the opinion of Jerold Roschwalb of NASULGC [National Association of State Universities and Land-Grant Colleges]. Jerry reminded this year's attendees how legislators and the public seem far more attracted to issues which appear to be scandalous than they do to hearing about the significant scientific accomplishments taking place at our campuses which we so often take for granted. Why is so much more attention paid to how a university may have accounted for the value of a yacht than is paid to how significantly improved the quality of life has become for people suffering from heart disease? Why do we get so caught up with the visit to an exotic resort by a university president's spouse than we do with productivity improvements resulting from the development of software? We don't make enough time to market our successes, but spend a good deal of time trying to explain away our failures.

Continuing Compliance Issues

Our institutions continue to deal with the management of environmental wastes, the proper care and housing of research animals and the myriad of documents associated with the proper protection of humans as research subjects. We all seem to have devised appropriate management systems to deal with such issues of health, safety and regulatory compliance. We have continued to improve our ability to manage financial compliance issues, and we all seem to

have improving systems for assuring our proposals are submitted on time and correctly.

Issues Over the Horizon

As we continue to improve upon our abilities to deal with the aforementioned compliance issues, we mustn't lose sight of what is coming at us over the horizon. Many of us are alert to congressional interest in how drugs are priced. Will this issue affect us and our institutions? What about costing policy issues such as tuition benefits for dependents, and the appropriate rates for use within our recharge centers? What will the deliberations of the Commission on Research Integrity cause in the way of new regulations and guidelines imposed upon us and our colleagues when we accept new awards? How will the ever-increasing attention being given to "whistle-blowers" affect the way in which we go about doing our day-to-day business? Is the government going to rethink its intellectual property policies in such a way as to no longer allow our institutions the right to own the intellectual products of our research efforts?

In addition to these longer-range concerns, there are two issues which will be impacting us and our institutions in the very near future: cost accounting standards and conflict of interest.

Cost Accounting Standards

The government recently indicated its intent to impose cost accounting standards upon educational institutions, which were previously one of the few types of government contractors exempt from the standards. However, cost accounting standards will not be imposed upon all educational institutions, only upon those institutions which appear in Exhibit A to OMB Circular A-21, or who have government contracts amounting to \$25 million or more. On the positive side, educational institutions will be subject only to a maximum of four standards, whereas other government contractors are subject to nineteen standards. The four standards to which full coverage is applicable are standard 501, "Consistency in estimating, accumulating and reporting costs"; standard 502, "Consistency in allocating costs incurred for the same purpose"; standard 505, "Accounting for unallowable costs"; and standard 506, "Cost accounting period."

In addition to being subject to the standards, each fully covered educational institution will be required to submit a disclosure statement which indicates the manner in which it

[Next Page]

accounts for various costs associated with its contracts within each business segment (such as separate campuses, separate divisions, independent operating entities, GOCOs, FFRDCs or joint ventures). The disclosure statement has a defined format, and was recently submitted to OMB for use clearance. Many universities believe the government has perilously underestimated the amount of time required to prepare the disclosure. Government regulators have estimated it will take approximately 40 hours to complete the disclosure statement. Industrial experience says the preparation takes significantly longer.

Conflict of Interest

Recently the National Science Foundation (NSF) published a final policy regarding how grantees are expected to deal with issues involving conflicts of interest. The NSF publication was accompanied by the Department of Health and Human Services (DHHS) publishing proposed rules in the *Federal Register* of June 28, 1994, entitled "Objectivity in Research." [See *Research Review*, September 1994.] The issue of conflict of interest has been the topic of earlier proposed rule-making and proposed policy by both DHHS and NSF for the past few years. However, the principle of disclosure and an institution's responsibility to "manage, reduce or eliminate actual or potential conflicts of interest" is now upon us. Fortunately, many institutions have either reviewed their current policies and modified them, or created conflict of interest policies in anticipation of the government's action. The community of educational institutions has had opportunity to participate and comment during the rule-making process. The NSF rules become effective for all institutions June 28, 1995. Educational institutions will soon be faced with providing a certificate to DHHS and NSF each time an application for funding is submitted which attests to the fact that an official of the institution has reviewed the proposal and to the best of his/her knowledge all financial disclosures required by the institution's conflict-of-interest policy have been made.

Despite an attempt to make the DHHS and NSF rules compatible, there are many areas where they still conflict. In this regard, there is hope DHHS will modify its proposed rules to allow institutions to deal with disclosed financial conflicts of interest needing mitigation to be resolved by the institution prior to *acceptance* of an award, rather than to have the resolution take place before the time an *application* for grant is submitted to the federal agency. There are also other clarifications which will hopefully be articulated by DHHS before the rules are implemented. We need to be attentive to assure that our institutions and faculty colleagues will continue to be able to qualify for federal support.

The rules regarding conflict of interest and cost accounting standards contain the same problem of government regulators seriously underestimating the time necessary to implement and manage the processes required by these new

regulations. Universities obviously haven't been persuasive in articulating the cost of federal regulation for grantees who are already operating under an administrative cap. There is some hope in that the government has indicated an intent to evaluate implementation of conflict-of-interest rules. Perhaps we will all be able to better demonstrate the impact of these new procedures upon our institutions as we gain hands-on experience in implementing them at our campuses.

Along with the administrative burdens and costs associated with the implementation of this new rule, there are very likely going to be unintended consequences as educational institutions start gathering such significantly personal financial information of their employees and their families. There are also likely to be unexpected delays in the processes of submitting proposals and accepting awards, to say nothing of the tasks associated with informing our colleagues of these new requirements.

Conclusion

We will all be well-served to prepare ourselves to deal with these events expected for the immediate future, as well as the unexpected events which lie over the horizon, by paying continuing attention to information provided by our professional associations and by continuous contact with our colleagues. NCURA's annual meeting is an ideal means for maintaining our prepared state, and perhaps NCURA will sponsor another special summer conference next summer to assist us in keeping abreast of how we might cope with regulatory compliance.Ω

Fred Bentley



Progress Report on Transfer of Admissions Decision-Making Authority

In spring 1993 the Graduate School governance structure endorsed recommendations to give individual graduate programs increased authority to manage their own activities, especially the admission of graduate students and the appointment of graduate faculty. The change came as a result of the 1992 review of the Graduate School by an all-University committee chaired by Paul E. Johnson, Carlson Professor of Decision Sciences and director of graduate studies for the Ph.D. degree program in business administration. (See *Research Review*, November 1993, for a related article on implementation of Johnson Committee recommendations.)

As a prerequisite to assuming decision-making authority for admissions, programs must submit baseline information—via the “Graduate Program Management Evaluation Form”—for review and approval by a Graduate School-wide committee, consisting of 27 graduate faculty, graduate students and Graduate School administrators. The management evaluation form seeks comprehensive information about a program, including information about the number and characteristics of students admitted and enrolled, student financial support, standards for student selection, degree requirements and monitoring procedures to ensure students’ timely progress, criteria for appointment to the graduate faculty, governance structures and processes within the program, strategies and goals with respect to ensuring a high-quality and diverse applicant pool, and long-term programmatic goals. For purposes of delegating authority for admissions, the most important elements of the management evaluation form are the criteria and process the program employs in deciding graduate admissions.

The form and instructions for completing it were mailed to all directors of graduate studies in early December of last year. Of the 104 programs submitting their forms by mid-November 1994, 82 programs have been approved for a new, streamlined process for 1995-96 admissions. (The remaining programs will process 1995-96 admissions according to current procedures and will participate in the new system beginning with the 1996-97 admissions cycle.) Although programs approved for the new process will make their own admissions decisions for next year, the Graduate School will continue to collect applications and related material, assemble applicant files and forward these to programs for review, enter applicant information into the University’s admissions database, and send the official letter of admission or rejection. To assist programs in evaluating the credentials of international students, the Graduate School will also continue to conduct an initial review of these files before forwarding them to programs, and will continue to is-

sue the necessary Immigration and Naturalization Service documents. No added workload will thus accompany the transfer of admissions decision-making authority to programs. Prospective students and programs alike will benefit from the new system, which in part is intended to speed notification to applicants of the admissions decision. Future enhancements will include paperless transfer of information between the Graduate School and programs to further speed the admissions process.

Not only does the graduate program management evaluation form ask programs to identify standards to be used in various aspects of program management, but it also asks them to identify their goals over the next three to five years. This information will facilitate the Graduate School’s planning efforts, and help it respond to anticipated needs and developments. Because budgetary colleges and departments share with the Graduate School responsibility for successful graduate education, the Graduate School in early November sent deans and department heads the completed management evaluation forms for their affiliated graduate programs. It is hoped that the information on goals provided in the forms will also be of use in planning activities at the college and department levels. This information will in addition serve as a reference point for the Graduate School and its governance committees in monitoring programs’ effectiveness and in periodically assessing programs’ quality and success.

If you would like more information about the graduate program management evaluation form, the process for its review, or the new admissions system, please contact Graduate School Associate Dean Ted Labuza (tplabuza@epx.cis.umn.edu). Other changes and initiatives are underway in the Graduate School in response to the 1992 review (for example, a user-friendly data management tool will soon be available to directors of graduate studies and a Graduate School gopher server is being developed). Watch for updates in these pages on these related undertakings.Ω

astronomy, chemistry, geology, geophysics, geochemistry, volcanology, biology, medicine and philosophy—I've probably missed a few—and of course, ultimately, life.

In this age of so-called big-science projects, with multimillion dollar grants, large research teams, and enormously expensive equipment, it is instructive to think back about a self-described 'gadgeteer,' from [St. Paul] Humboldt High, who could by himself design and build a mass spectrometer that has had tremendous effects on many areas of science."

Wasserburg and others spoke of a few of Nier's many scientific accomplishments:

- He designed and constructed numerous mass spectrometer devices that have been widely used in the physical, biological and medical sciences, including portable ones he carried in briefcases to market his ideas to NASA;
- He precisely measured the atomic weights of most of the elements in the periodic table, and discovered many new isotopes;
- He isolated the first pure sample of uranium-235, which he sent to Columbia University's Enrico Fermi, who used it to demonstrate slow neutron fission and open the atomic age ("U. of M. Man's Discovery Opens Vast Power Source," proclaimed the *Minneapolis Star Journal* on May 5, 1940);
- He invented a thermal diffusion column to produce carbon-13 ("heavy carbon") which he used as a tracer to study bacterial metabolism of carbon dioxide and photosynthetic processes;
- He calculated variations in the relative abundance of the isotopes of common lead and the isotopic composition of radiogenic lead, data which he and others used to measure absolute geologic time;
- He performed fundamental measurements of helium-3 and helium-4 in the atmosphere and developed the potassium-argon method of radioactive dating, providing major research tools for geologists and others studying the formation and structure of the earth and the evolution of the sun;
- He built a helium leak detector, initially for the Atomic Energy Commission but which was later applied in many industrial and laboratory situations;
- He greeted the dawn of the space age by building simple, rugged mass-spectrometry instruments to study the composition of the Earth's upper atmosphere and the Martian atmosphere, and to analyze helium and neon in interplanetary dust particles.

On Nier's practical genius as a gadgeteer, Wasserburg said, "Al's solution [to a difficult scientific question] was always

to design an experiment and build an instrument to do the job."

Nier was equally adept at exciting his colleagues and students about science. "Students were not in awe of Al Nier, they were enchanted by his youthful enthusiasm," Wasserburg said. "When I think of Al Nier I always think of his eager curiosity; his joyful use of the word 'gee,' as in 'Gee, that's interesting,' which meant something positive and wonderful. Sometimes though he said, 'Gee, is that true?' [which was his polite way of disagreeing]. Al suffered fools patiently, and he was remarkably even-tempered."

"Al Nier was a modest man," concluded Wasserburg, "which if you think about it is remarkable, because he didn't have much to be modest about."

Henry E. Duckworth, president emeritus of the University of Winnipeg, remembered Al Nier, his "good friend for almost half a century," as "a man who could do anything he set his mind to. It was not arrogance, just a simple belief in his own powers."

Duckworth noted that one of the major contributions of Nier's career was the unification of the chemical and physical atomic weights/masses. He explained that, "prior to 1960, the chemical atomic weights were based on oxygen as found in nature; that is, the three isotopic forms 16, 17 and 18. The physical atomic masses, on the other hand, were based on oxygen-16. To convert to the chemical scale required a conversion factor of 1.000275, approximately. The situation was not very satisfactory, especially when many were uncertain whether to multiply or divide by the conversion factor!" Duckworth joked. "To rid the world of these irritations, Al Nier and the Swede, Ohlander, suggested independently in 1956 that the two scales be brought together through carbon-12. Despite the inertia that characterizes the international unions of pure and applied chemistry and physics, they agreed in 1959 and 1960, respectively, to adopt the Nier-Ohlander suggestion."

Commenting humorously on Nier's personal idiosyncracies, Duckworth commented that he always carried the most up-to-date items on his frequent international travels. "When the rest of us were lugging heavy glass slides, he had a vastly lighter version and then moved to 35mm before we were aware of that possibility. His camera was always the most compact and had the fastest lens. With the help of these and other technical aids, he could take off for Europe at short notice and with little baggage, and visit several laboratories in a few days.

"He often flew on the military transport service. On one occasion, a nervous pilot was approaching an English airport that was strange to him. Al was awakened by an attendant who said, 'Professor, I understand you have landed at this airport before?' When Al admitted this was the case, she said, 'The pilot would like you to join him in the cockpit.'"

(Next Page)

Duckworth continued to amuse the attendees by remarking that "I was struck by the speed with which he could fall asleep, whether sitting in a meeting, in a car, or in the second row at the opera. He did not close his eyes to ruminate; we all knew it was the real thing. His expression was so benevolent, almost angelic, that no one was offended. And we rejoiced again at his presence, when he chose to reenter the world of consciousness."

By far the most important of Nier's characteristics, Duckworth said, were "his intelligence, his courtesy, and his guidance. He was a scientist who combined outstanding technical skills with remarkable intuition and an insatiable curiosity. He was a friend who lightened each room he entered, who enlivened each conversation he joined, and who remained in each memory when he left.

"He remained a research scientist until the day he died. During a career of 60 years, his work had a direct influence on thousands of others, perhaps tens of thousands, perhaps hundreds of thousands. If the Nobel Prize were awarded for life achievements, and not, as seems to be the rule, for accomplishments in a narrow area, he would have achieved that honor long ago. Fortunately, other honors took account of his unique place in science," Duckworth said, referring among other honors to Nier's election to the National Academy of Science (at age 35), the American Academy of Arts and Sciences and the Royal Swedish Academy of Science, and to his receipt of the Arthur L. Day Medal of the Geological Society of America, the Viktor M. Goldschmidt Medal of the Geochemical Society, the Field and Franklin Award of the American Chemical Society and the William Bowie Medal of the American Geophysical Union.

Duckworth concluded by saying, "I salute you, Al Nier: consummate scientist, good companion, and treasured friend."

The final speaker on the formal program was V. Rama Murthy, professor of geology and geophysics at the University of Minnesota. Murthy began by offering one of Nier's own writings, an autobiographical sketch he wrote in 1990, as an apropos commentary for the occasion:

"It has been my conviction that some of the most interesting pursuits of knowledge are in areas which cross traditional lines, and where cooperation between specialists with diverse expertise is required."

Murthy recalled his collaborations with Nier during the 1980s: "I went to him to ask if he would design a small double-focusing mass spectrometer for high-precision measurements in isotope geology research. He was so full of enthusiasm for the project, that Nier and I wrote a proposal to NSF to seek some modest funding, which we got, and built the MinnMass Series of instruments. Working with Nier during the design and construction of these machines

was a most thrilling and memorable time for me and my graduate students. Nier's openness and generosity were not limited to his colleagues—they included everyone who came into contact with him, students, machinists and instrument builders in the world-famous machine and electrical shops he helped establish in the physics department here.

"To have lived in Nier's time, to have had him as a mentor, colleague and friend, and above all a deeply humane being, is a privilege and an honor. In turn, each of us in our time, cannot but deeply cherish and honor his memory."

Several colleagues shared their memories of Al Nier following the program. Perhaps Clayton F. Giese, professor of physics and astronomy, best captured Nier's spirit and the feelings of those who knew him:

"Gee, we really loved the guy."

By Michael P. Moore

Technology Forum

{Continued From Page 3}

mediately, to being a technological necessity. Many people are well aware that major corporations, which have been the suppliers of materials from which many biomedical devices have been fabricated, have announced within the last year or so their intentions to pull out of the supply of materials for biomedical devices. A *New York Times* story earlier this spring announced the intentions of DuPont and Dow to stop supplying materials for the biomedical industry. This is a very important technological sector, but the markets are small, and that coupled with the massive product liability issues makes this a sound business decision for the DuPonts and the Dow Corning, which have the deepest pockets in the food chain of exposure to product liability lawsuits. While it may be sound business sense for these corporations, it leaves medical device companies, of which we have some 300 here in Minnesota, with a major threat to their continued growth. So I believe that this engineering of new soft composite biomaterials is very important.

The basic approach to tissue engineering or biomedical or bioartificial materials through making soft composite materials is to create a scaffold, either out of a synthetic polymer or out of a reconstituted collagen. This natural extracellular matrix can be mixed with a suspension of cells and either cultured as that mixture and then implanted, or implanted and then have cells injected into it. As the cells grow and proliferate and move and populate this bioartificial scaffold, they generate new tissue, for example new liver tissue, or new cartilage or new blood vessels. In an ideal case the synthetic matrix will enzymatically degrade so there is a gradual transformation to natural human tissue. So this scaffold is kind of a jump start, a catalyst that enables the cells to take hold quickly and also enables us to engineer the shape and the physical environment in which this tissue grows.

{Next Page}

There has been a lot of work, for example, on skin, which is a relatively easy tissue to mimic. Several companies are making products that amount to artificial skin made on exactly this kind of scheme. In this case a mesh is seeded with cells, which then grow and ultimately replace the synthetic bioartificial tissue with natural tissue. Now as I said, skin is a relatively easy tissue to mimic, compared to some of the tissues involved in metabolic function. Connective tissues such as skin and cartilage can thrive with distances of millimeters between the cells and the nearest blood vessels. That means hundreds of cell diameters can be between the cell that you're trying to seed and its supply of nutrients and oxygen. In liver, there is usually no more than one layer of cells between a liver cell and its nearest blood supply. These are much more metabolically active cells and therefore require a different kind of arrangement. A simple engineering way to put it is that mass transfer dominates mechanics in the engineering of liver tissue.

I'd like to talk then about some of the things going on here at the University of Minnesota, beginning with the bioartificial liver project, which is being led by Frank Cerra in Surgery and Wei-Shou Hu in Chemical Engineering as well as a cast of other researchers [the project is funded by Regenerex, Inc., a subsidiary of Cellex Biosciences, Inc., Minneapolis]. There is a major need for some kind of liver replacement to prevent some of the 30,000 deaths a year from liver failure for a variety of disease and trauma and genetic causes. Liver transplantation cannot even meet 10 percent of this need; there are only about 2,000 liver transplants every year, so that's grossly inadequate.

While engineering liver tissue places great demands on regenerating the biochemical function, we can leave aside some of the mechanical aspects of engineering liver tissue. The objective of the project here is to provide acute care, that is a temporary addressing of acute liver failure by using a hollow fiber reactor, which will function as an [external] artificial liver. This doesn't have the same kind of tissue engineering scaffold, but for those of you who are chemical engineers or mechanical engineers and are used to heat and mass transfer, this is something like a countercurrent exchanger, where liver cells can be cultured inside the lumen of the hollow fiber reactor and the blood can flow in the extracapillary space. The hollow fibers are necessary to generate the characteristic of liver tissue that the cells are always close to a nutrient supply and to blood.

The bioartificial liver group has had good success in trials with dogs. This is not envisioned as a device that is going to be able to supply long-term liver function, unless some remarkable improvements are made in the plumbing and the portability of this device, so what one is aiming for is enhanced survival of a couple of days or a couple of weeks to allow the patient's liver to recover from injury or poisoning or for a donor organ to become available. And they have been able to demonstrate that quite effectively in animal tri-

als, achieving significant enhanced survival rate. They are waiting to begin human trials of the bioartificial liver sometime within the next couple of months.

Let's talk now about other kinds of tissues like connective tissue or bioartificial arteries. These materials have to sustain cyclic, repetitive, high levels of stress over long periods of time, so we must shift the focus not entirely but largely from metabolic performance to mechanical performance. I want to tell you a few things quickly about a bioartificial artery project, which is a collaboration between Dan Mooradian in the Biomedical Engineering Center and Bob Tranquillo in the Chemical Engineering and Materials Science department. They are producing what they call an "oriented bioartificial artery," but it is essentially tubular tissue that has to withstand mechanical stress, such as in the esophagus, trachea, intestine, etc., so the project has more of a general aspect than the term bioartificial artery would imply.

An artery or a blood vessel or other tubular tissues are complex composite materials with different scales of structure. In human tissue there is a very pronounced circumferential orientation of the cells and the collagen fibers that helps the tissues withstand the stresses generated by pulsatile blood flow. So they are working in particular on how to generate this to see whether circumferential orientation provides improved mechanical characteristics in bioartificial blood vessels. They have found [a way to produce] a force that will tend to align these fibers in the circumferential direction. They have been able to show a factor-of-two improvement roughly speaking in the mechanical strength, in terms of the stiffening or the decrease in the mechanical compliance.

Now it turns out that consolidation of these mechanical properties is also important in the fabrication of this kind of tissue. When you seed these tubes fabricated from collagen gel with cells, and allow the cells to grow and proliferate, one finds that the tube diameter shrinks. The cells exert enormous mechanical traction on the surrounding tissue and that is a very important part of the mechanical properties of these tissues. Bob Tranquillo has been studying the compaction process to see how strong the mechanical effects are that cells are capable of exerting on tissue. This is a fundamental process both with the bioartificial liver and the bioartificial blood vessel.

Another fundamental aspect, which is the work that I have been most closely involved with, is understanding how tissues and cells communicate with one another. Because if we want to engineer a material that behaves like this and has soft composite biomaterial characteristics, you have to understand the interactions at all kinds of scales, from the molecules, up to the cells, and up to the macroscopic properties of tissues. So things that are going on in the Medical School, particularly in Laboratory Medicine and Pathology and the Biomedical Engineering Center, revolve around identifying the molecular components of cell-tissue interac-

{Next Page}



Matt Tirrell

Technology Forum

(Continued From previous Page)

tion, the peptide polysaccharides. My group is trying to understand how the physical arrangement of these things is important in tissue-cell communication and then seeing if we can mimic that in certain kinds of bioartificial materials situations. We've done chemical synthesis that attaches these peptides or polysaccharide molecules to lipid tails like one finds in real membranes, and then we can assemble surfaces or membranes that bear this synthetically engineered chemical functionality.

So we could provide you (if you wanted them; people haven't been beating our door down for these yet) with molecules that enable one to make a self-assembled monolayer on a surface that would present to the outside world some biologically active polypeptide or polysaccharide. We have shown that it is possible to create these monolayers that have biological functionality, and we think that there are many possible applications, not only for surface coatings but for other kinds of biomedical applications such as drug delivery and so on.

I will finish up by giving you a little bit of information about the context in which this work occurs. All of the work that I have described rests on three current cornerstones of biomedical engineering at the University: first, the graduate program of the Biomedical Engineering Center, which has about 70 students pursuing degrees in biomedical engineer-

ing; second, the biomedical interfacial engineering program in the Center for Interfacial Engineering; and third, the research on biocompatibility of molecular and cellular engineering activities directed by Leo Furcht.

What we are aiming for is a formal alliance of these different groups in biomedical engineering that will enable us to have a central focal point for biomedical engineering on campus, to attract additional sources and external recognition, and to be the agent of cooperation among the different biomedical engineering activities on campus. We also want to develop more collaborative activities with the College of Biological Sciences, and there is interest in taking an academic look at the legal and regulatory affairs of the biomedical industry.

I hope I have succeeded in describing some of the ways that biomedical engineering has become a very fruitful area of cooperation at the University. This would have been impossible to pursue without collaboration between the Medical School and the Institute of Technology, which is being fostered by the Medtronic Foundation, the state legislature, and the University.

By Michael P. Moore

Etcetera

An NIH survey of all PHS-awardee institutions regarding their animal use, facilities and resources will begin "soon," according to the National Association for Biomedical Research.

"The National Survey of Laboratory Animal Use, Facilities and Resources" will "assist in evaluation of existing policies and procedures, and planning future activities to enhance the welfare of laboratory animals." It will be conducted by a private contractor, Advanced Resource Technologies, Inc., which will report its analyses but keep the raw data confidential and the sources anonymous.

Preparing for the Republican Party's "Contract with America," Republican staff of the House Budget Committee produced a list of budget cuts that includes about \$17 billion less for science programs over the next five years, most of which involve reductions in payments to medical schools. Other cuts involve indirect costs, NSF and USDA. The list does not mention NIH.

From *Washington Fax*

NIH has asked the U.S. Public Health Service to loosen its proposed rule regarding disclosure of conflicts of interest, and the PHS seems willing, according to *Science* magazine (*Science* 266, 28 October 1994, p. 531). The PHS proposal, published last June, requires applicants to disclose financial interests exceeding \$5,000 per year or 5 percent ownership in an enterprise (see *Research Review*, September 1994, p. 1).

EPA Invites Comment on Proposed rDNA Rule

Until December 31, The U.S. Environmental Protection Agency invites comment on its proposed rule to govern research and commercial use of recombinant microorganisms.

Operating under the Toxic Substances Control Act (TSCA), EPA wants to "screen new microorganisms" formed by combination of genetic material from organisms in different genera. The proposed rule applies to recombinant forms of bacteria, protozoa, fungi, viruses, phages, mycoplasmas, spiroplasmas, microphytoplanktons and green and red algae.

While EPA estimates that 300 universities could be affected by the rule, it believes the rule "will not seriously restrict" academic R&D.

For research within contained facilities, the EPA defers to other agencies' jurisdiction, and particularly to the NIH guidelines governing such research. Where other agencies do not have jurisdiction, EPA proposes standard safety and record keeping measures and does not require reporting to EPA before research proceeds.

Experimental release of new microorganisms into the environment, however, must have written permission from the EPA, with some exceptions. Organisms derived from *Bradyrhizobium japonicum* and *Rhizobium meliloti* (nitrogen-fixing bacteria in agricultural use) are exempt for tests that don't exceed 10 acres in area. Other microorganisms may be exempt as EPA gains familiarity with them. The EPA seeks further comment as to how to define "low-risk" field tests that do not need review.

Commercial use and distribution of new microorganisms requires 90-day review and permission from the EPA. Reporting to EPA is not necessary, however, for commercial

work with 10 organisms already in common use for such purposes as making cheese, wine, beer and soy sauce.

Only the commercial reviews come with a fee: \$100 for small businesses (annual sales less than \$40 million) and \$2,500 for other businesses. EPA estimates that 130 firms, 42 percent of them small businesses, may be subject to these regulations, and that the cost to the government will be about \$118,000 in the first year.

EPA acknowledges that the proposed rule is complex. In addition, EPA has no special form for submission of the required reports; it simply requires all "reasonably ascertainable information" which submitters think EPA will need. Under the circumstances, EPA encourages people to contact it early, before submitting reports or deciding submission isn't necessary. EPA also invites comment on whether the flexibility provided by the various exemptions makes up for the complexity.

"Microbial Products of Biotechnology: Proposed Regulation Under the Toxic Substances Control Act," was published in the *Federal Register* on September 1 (59 FR 45526), and comments were due October 31. On October 31, EPA extended the deadline to December 31.

For general information or copies of the proposal, contact Susan Hazen, Director, Environmental Assistance Division (7408), EPA, Room E-543B, 401 M St., SW., Washington, DC 20460; 202/554-1404. Technical information is also available from Paul Campanella at the EPA, 202/260-3725. Comments on the proposal should go to TSCA Public Docket Office (7407), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Include the docket control number OPPTS-00049C.

Condensed from the *Federal Register* by Phil Norcross



Best Wishes

for the

Holiday Season

from the Staff at

ORTTA



National Institutes of Health

Peer Review Appeal Process

The National Institutes of Health (NIH) provides applicants who feel that the handling or peer review of their grant applications has been inappropriate, biased or wrong, with two sequential opportunities to have their concerns addressed—"rebuttals" and "appeals."

The first opportunity is after receipt of the summary statement that documents the initial review of an application's scientific and/or technical merit. If the applicant submits a letter rebutting the review to the program administrator responsible for the application, that letter will usually be made available to the National Advisory Council/Board of the relevant NIH Institute/Center/Division (ICD) for consideration, if the ICD staff cannot handle the concerns administratively. If the applicant's objections have merit, the council may recommend that the application be deferred and rereviewed. However, should the council not recommend deferral and rereview, but concur with the initial review, applicants have a second opportunity to have their concerns heard by submitting formal appeals of the council's decision.

The *NIH Manual*, Chapter 4518, states, "The PI and the applicant institution, represented by the institutional official authorized to sign applications, must jointly sign an appeal and send it to the NIH Peer Review Appeals Officer. The official representative's signature indicates that the applicant institution endorses both form and substance of the appeal." The appeal letter must explain fully the reasons for the disagreement, append supporting documentation, and be sent to

NIH Appeals Officer
Office of the Director
National Institutes of Health
Building 1, Room 328
Bethesda, MD 20892.

Two points that are important for applicants considering an appeal to weigh for themselves concern the possible outcomes and the timing of the appeal process. The most favorable possible outcome for an applicant in an appeal case can only be a decision that the application in question be rereviewed, since appeals cases examine only whether there were any flaws in the peer review process. The other possible outcome is that the review of the application was not substantially flawed and any minor flaws in the review did not affect the recommendation regarding the application. In that case, the review would stand and the application would not be rereviewed.

As the conduct of an appeal case involves several steps of process and review, it may take at least four months (or one review cycle) to complete. Thus, given the possible outcomes and the timing of the appeal process, applicants may wish to consider whether deficiencies in review of their applications were substantive enough to have had a major

deleterious effect on the review and, if not, to revise and re-submit the application instead.

Applicant concerns about acceptance for review, responsiveness to a request for applications, other receipt issues, or the referral of applications, when submitted prior to the initial review, are entirely the responsibility of the Division of Research Grants (DRG) or of the ICD assigned to review the application (as indicated on the computer-generated notice of assignments sent to the applicants). This DRG or ICD process also provides two opportunities for applicant concerns to be addressed.

Decisions regarding the *funding* of applications *may not* be appealed as they are actions that are external to the peer review process.

For additional information about the peer review appeal process or to discuss a particular matter, contact Dr. Janet Cuca at 301/496-5358.

From the *NIH Guide*, Volume 23, Number 39, November 4, 1994

New Funding for New Facilities

For construction and renovation of facilities, there are new opportunities in 1995 to win grants from NSF, NIH and the U.S. Health Resources and Services Administration.

The NSF's 1995 appropriation contains plans for spending \$500 million on academic science facilities during fiscal '95 and '96. In November, NSF solicited proposals to help it spend \$59 million for new instrumentation. For details, see "Program Information" in this issue of *Research Review*. By mid-December, NSF hopes to announce another \$59 million program to renovate academic facilities and buy equipment.

NSF can spend another \$132 million on infrastructure in fiscal 1995, provided the administration requests \$250 million for infrastructure for 1996, and provided NSF and other science agencies complete a plan by August that addresses academic infrastructure needs overall. Estimates for those needs range from \$8 billion to \$12 billion.

At the NIH, the Center for Research Resources will invite applications for \$20 million in 1995, up from \$7 million in fiscal 1994. The money will go to build and renovate biomedical research space.

The HRSA, part of the U.S. Department of Health and Human Services, has \$19 million in 1995 for construction of outpatient care facilities—at least \$4 million for competitive grants and the rest for political awards. The program may target facilities that treat tuberculosis.

From *Federal Grants and Contracts Weekly*, October 24, 1994.

NIAAA and NIDA

Application Triage and Streamlined Summary Statement

Beginning with the review of applications submitted for the October 1, 1994, receipt date, all National Institute on Alcohol Abuse and Alcoholism (NIAAA) and National Institute on Drug Abuse (NIDA) standing review committees will triage investigator initiated research project grant applications (R01s and R29s). Reviewers will be instructed to designate approximately half of the applications as "non-competitive" for support.

For this purpose "noncompetitive" means that, with respect to scientific and technical merit, the application is judged to be in the lower half of research project grant applications usually reviewed by the committee. Applications determined to be noncompetitive *will not* receive full discussion at the review committee meeting, *will not* receive a priority score, and *will not* routinely be further reviewed by a national advisory council or board. A decision to not fully discuss an application requires unanimous agreement of the review committee.

The summary statement for an application determined non-competitive will consist of the customary administrative information and will not include the reviewers' verbatim critiques. The summary statement for a competitive application that re-

ceives full discussion and a score will include, in addition to the reviewers' critiques and the administrative information, a "Résumé and Summary of Discussion," which synthesizes the review committee's discussion of the application.

Subsequent to the study section meeting, all applications will continue to receive the snap-out mailer that advises them of the outcome of the initial review.

Direct inquiries to:

Extramural Project Review Branch
Office of Scientific Affairs
National Institute on Alcohol Abuse and Alcoholism
Willco Building, Room 409
6000 Executive Boulevard, MSC 7003
Bethesda, MD 20892-7003
301/443-4375

or

Office of Extramural Program Review
National Institute on Drug Abuse
Parklawn Building, Room 10-42
Rockville, MD 20857
301/443-2755

New Financing for Technology Research Collaboration

Live Satellite Teleconference to help Universities and Small Businesses Form SBIR and STTR Collaborations

Monday, December 12, 12:00 to 4:00 p.m.
Mechanical Engineering Building room 212
111 Church St. SE
East Bank campus

Leading educators and technology entrepreneurs will advise about research collaborations between academe and industry, especially collaborations to be funded by two programs in the U.S. Department of Commerce—Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR).

Speakers and Panel Members include the following:

- Steve Brauer, president, Hawaii Biotechnology Group
- Russell Churchill, president, American Research and Development Corporation of Virginia
- Meg Douglas-Hamilton, president/CEO, Hamilton Thorne Research
- Robert Hensens, president, ANDCARE (on leave from Duke University)
- Donald Langenberg, chancellor, University of Maryland System
- C. Peter McGrath, president, National Association of State Universities and Land Grant Colleges

- Dean Olson, Chairman, Aircraft Gear Corporation
- Joel Snow, director, Institute for Physical Research and Technology, Iowa State University
- Jerald Tunheim, president, Dakota State University
- Cardinal Warde, president, Optron Systems; professor, MIT
- James Woo, president, InterScience, Inc.

The teleconference is sponsored by the Economic Development Administration, U.S. Department of Commerce; National Technological University; U.S. West Foundation; Academy of Technology Entrepreneurs and Innovators; and the Small Business Coalition for Science and Technology.

The University downlink is sponsored by Minnesota Project Innovation (MPI), a small-business development center with state and federal funding for technology transfer, manufacturing, marketing and Minnesota efforts connected to the SBIR program.

For more information, call Ed Rippie, technology transfer director at MPI, 612/338-3280; or Don Coffin at the National Technological University, 301/314-8640.

Streamlining the NIH Noncompeting Continuation Application

In the spirit of the federal government's reinvention initiatives, the National Institutes of Health (NIH) has developed a simplified process for the submission of information prior to the issuance of a noncompeting continuation award.

Currently a progress report and four financial documents are required each year for each grant. Two of these financial documents are in the noncompeting continuation application kit (PHS 2590) — a budget for the next budget period and an estimated report of expenditures for the current budget period. In addition, the grantee institution is required to submit a financial status report no later than 90 days after the close of the budget period and a federal cash transaction report.

Because the budget is negotiated for all years of the project period at the time of the initial award, annual requirements for financial documentation are being streamlined. At the time a competitive award is negotiated, NIH staff assure that proposed costs are allowable, allocable, reasonable and necessary for the project. These costs are analyzed for each year of the project at the time of the initial award, and reasonable annual increments are provided. For a continuation, only a modified progress report, the federal cash transaction report and the financial status report will be required to enable NIH staff to monitor the scientific and financial aspects of the project.

The simplified, noncompeting continuation application process is effective immediately.

Instructions

These instructions should be used in conjunction with the instructions in the PHS 2590 application kit to submit the information for determination of continued support. Other elements in the PHS 2590 remain the same, for example, a biographical sketch page is still required for new key personnel, and when additional information is required, appropriate pages from the PHS 2590 kit should be used.

These instructions apply to R01, R03, R13, R15, R18, R21, R24, R25, R29, R37, R42, R44, and all K-series mechanisms.

1. Complete the face page (form page 1), the progress report summary (form page 6), the personnel and study subjects page (form page 7), and checklist page (form page 8), and provide a brief, two-page progress report (tables and/or figures that summarize key accomplishments may be in addition to the two pages). It is not necessary to complete the indirect-cost portion of the checklist page unless there is a change in performance site.
2. Answers to the following questions should be inserted before the progress report.

- a. Has there been a change in other support of key personnel since the last reporting period? If yes, form page 5 of the PHS 2590 application kit must be completed. If not, so state.
- b. Will there be, in the next budget period, significant rebudgeting of funds and/or change in level of effort for key personnel from what was approved for this project? If yes, the budget page (form page 2) and the budget justification page (form page 3) of the PHS 2590 kit must be completed. If no, so state.
- c. Any estimated, unobligated balance (including prior year carryover) that is greater than 25 percent of the current year's total budget or more than \$250,000 must be explained.

After reviewing the continuation application, NIH program or grants management staff may require additional information to evaluate the project for continued funding. Failure to provide this information in a timely manner will result in a delayed award.

If a project or grantee organization requires closer monitoring by NIH staff, the project and/or organization may be exempted from using the simplified, noncompeting continuation application procedures.

Inquiries

If there are questions concerning the simplified, noncompeting continuation application procedure for a specific award, contact the NIH grants management specialist or program administrator who is responsible for the administration of the award. Questions may also be directed to the appropriate ORTTA grant administrator.

From *The NIH Guide*, Volume 23, Number 38, October 28, 1994

AAAS Meeting

The 1995 meeting of the American Association for the Advancement of Science includes a speaker and an organizer from the University, according to the preliminary program published in the October 21 issue of *Science*. The AAAS meets Thursday, February 16, through Tuesday, February 21, in Atlanta.

Pierre C. Robert, research associate and associate professor in the University's Department of Soil Science, will present a "topical lecture" on "Precision Farming: the Next Revolution in Agricultural Management?" on Tuesday at 1:00 p.m.

Marian B. Pour-El, professor in the University's School of Mathematics is helping organize a session titled "The Legacy of Alan Turing" for Sunday at 2:30 p.m.

Department of Health and Human Services Development of GrantsNet

What Is GrantsNet?

The Department of Health and Human Services (DHHS) has been rapidly improving its information resources and grant activities to incorporate total quality management and electronic technologies. As part of this process, HHS is piloting an on-line grant information service that will serve the general public, grantee organizations, and government grant-making agencies. This new service, GrantsNet, is a free, public-access computer network for finding and exchanging information about HHS and other federal grant programs. Anyone having a personal computer with internet capability will be able to access GrantsNet. Conceptually, GrantsNet has two components: 1) an on-line informational reference service using gopher server technology; and 2) an interactive mailing list service which groups subscribers with common interests into computer-managed mailing lists for sharing of information and dialogue on the given subject.

The mission of GrantsNet is to serve as a vehicle and catalyst for continuous improvement and innovation in federal grants management practices, policies and information dissemination. It will provide a medium for the sharing of ideas, successes, news, lessons learned and an archival reference library of grant-related legislation, regulations and policies. GrantsNet will also provide a yellow-page style directory of granting offices, grants management staff and grant program personnel.

The major thrust of GrantsNet is to allow the public to cut through government red tape—to find the information they want, when they want it, and whom to directly contact for additional information.

When Will It Be Implemented?

HHS has established a gopher and world wide web (WWW) server to facilitate the GrantsNet mission and vision, assisted by the Parklawn Computer Center which provides selected communication services. Fiscal year 1995 will serve as a pilot-testing period. Once success of the system has been established and tested, HHS intends to expand the scope of GrantsNet governmentwide.

[GrantsNet is readily accessible via ORTTA's gopher. See article at right.]

For Further Information

To be placed on a mailing list for receiving news and updates on GrantsNet, send your name, organization, mailing address, internet address and telephone number to Suzanne M. Neill, sneill@os.dhhs.gov or Charles Bish, cbish@os.dhhs.gov. Neill chairs the GrantsNet team.

Finally, HHS recognizes that for GrantsNet to become a practical and user-friendly information service to the federal grantee community and to the general public, coordination with interested parties and feedback from users will be important. To that end, the GrantsNet team is interested in any questions or suggestions you may have. This includes recommendations for improving GrantsNet services, as well as the identification of additional grants information, resources, and/or activities that you would like HHS to post. Please address your comments to Neill.

From *The NIH Guide*, Volume 23, Number 38, October 28, 1994

What's New on the ORTTA Gopher?

Several new links have been set up under ORTTA's gopher menu item, *Other Useful Resources*. The first new link points to *Other U.S. Government Gophers*. This list of gophers, which is maintained by NSF, includes gophers run by or for U.S. government agencies. NSF has included on the list (under *Government in General*), a gopher maintained by the University of California, Irvine, that NSF says is much more comprehensive.

The second new link is to the *Legi-Slate Gopher*, which contains information about federal legislation and regulations. Currently only the public access portion is available. We will link to the full version as soon as it is available.

The third new link points to *Federal Government General Information Resources*. This directory is on the Library of Congress' gopher, and offers, among other things the *U.S. Government Manual*, the FY 1995 Federal Budget, and search items for the *Catalog of Federal Domestic Assistance* and the *Commerce Business Daily*.

The fourth new link is to the DHHS' GrantsNet gopher which is currently under development. Conceptually, GrantsNet has two components: reference service on a gopher server (and WWW) and interactive mailing list services (listserv). According to DHHS, fiscal 1995 will serve as the pilot-testing period. Once success of the system has been established, DHHS intends to expand it governmentwide. (See additional article at left).

We hope these expanded offerings are helpful. Please send comments and suggestions for additional gopher resources you'd find helpful to gopher@ortta.umn.edu.

Technology Reinvestment Project

The Technology Reinvestment Project (TRP) is a multi-agency, dual-use technology investment effort that includes the Departments of Defense, Commerce, Energy and Transportation, the National Science Foundation, and the National Aeronautics and Space Administration. It is the continuing mission of the TRP to stimulate the transition to a growing, integrated, national industrial capability which provides the most advanced, affordable military systems and the most competitive commercial products. TRP programs are structured to expand employment, assist small firms, and establish education and training programs that enhance U.S. manufacturing skills and target displaced defense industry workers. These programs have common requirements, including specified minimum participation with an emphasis on "partnerships," cost-sharing between participants and the federal government, and defense relevance.

The TRP plans to conduct a major competition in FY95 in the following programs and areas:

Technology Development

- Biological Sensors and Multi-Organ Diagnostic Screening
- War and Law Enforcement
- Affordable Polymer Matrix Composites for Airframes
- Low-Cost Specialty Metals Processing
- Millimeter Wave Products
- Electric and Hybrid Vehicles
- Ceramic Material Applications
- Small Precision Optics Manufacturing
- Digital Wireless Communications and Networking
- Affordable Control Technologies
- Cryogenic Coolers for Electronic Systems
- Microelectromechanical Systems (MEMS) Applications

Regional Technology Alliances

The TRP will solicit proposals which enhance regional industrial capabilities for producing dual-use products and processes through activities that employ, demonstrate or develop a specific technology-based advancement. Industrial capabilities related to the technology focus areas listed above are of particular interest, but proposals in other areas will be considered as well. Proposed efforts must both increase the competitiveness of the region and benefit national security.

Small Business Innovation Research (SBIR)

Proposals will be accepted in the same focus areas as Technology Development, above. No cost share or partnerships are required for the SBIR competition.

Opportunity for Early Evaluation

To assist potential proposers in determining whether a proposal idea is in line with TRP goals and objectives, the TRP will accept and evaluate five-page concept papers in Technology Development and Regional Technology Alliances only. The deadline for concept papers is **December 21**.

Formal solicitation for the TRP programs will be published February 3, 1995; proposals will be due **March 17**. Additional information may be obtained by calling 1/800/dual-use (1/800/382-5873) or by faxing 703/696-3813 and addressing the Technology Reinvestment Project.

American Association for the Advancement of Science

Fellowship Opportunities

Founded in 1848, the American Association for the Advancement of Science (AAAS) is the world's largest leading general scientific organization, with approximately 300 affiliated science and engineering societies and 140,000 individual members.

AAAS sponsors four science policy fellowship programs each year. Three of these provide opportunities for postdoctoral to midcareer scientists and engineers to spend *one year in Washington, DC*, beginning in September 1995, to work in areas of public policy as they relate to science and technology. These are the **Congressional Science and Engineering Fellows Program**; the **Science, Engineering and Diplomacy Fellows Program**; and the **Technology Policy Science and Engineering Fellows Program**.

The fourth program, the **Environmental Science and Engineering Fellows Program** offers fellowships for *ten weeks in the summer*, placing postdoctoral to midcareer scientists and engineers at the U.S. Environmental Protection Agency to work on policy aspects of environmental issues.

Applications are invited from persons in any physical, biological or social science or any field of engineering. The term science is used broadly to include the system sciences, public health and other technical areas.

Candidates are expected to be members of the AAAS or to apply for membership at the time the fellowship application is submitted.

A letter of intent is required. The letter must indicate a desire to apply and must provide addresses and telephone numbers of professional references. The letter should indicate availability for a possible interview during March or April and

{Next Page}

should provide an address and telephone number where the applicant may be reached from February through April. It should also mention how the applicant first learned of the fellowship program to which s/he is applying, and cite the applicant's AAAS membership ID number, or note that an application for membership will be submitted upon award of a fellowship.

In addition, AAAS sponsors another fellowship program which focuses on the public understanding of science. The **Mass Media Science and Engineering Fellows Program** targets undergraduate and graduate students in science and engineering and involves them in a summer program working as reporters, researchers and production assistants at media sites throughout the U.S. Requests for application materials must be made directly to the AAAS Mass Media Science and Engineering Fellows Program, 202/326-6670.

The application deadline for all programs is **January 15, 1995**. Complete copies of the individual announcements/program descriptions, including an application form, are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Science and Engineering Fellows Program, American Association for the Advancement of Science, 1333 H Street NW, Washington, DC 20005; 202/326-6600; fax 202/289-4950; science_policy@aaas.org.

■ National Science Foundation

Academic Research Infrastructure Program

The Academic Research Infrastructure (ARI) Program, offered by the National Science Foundation, is designed to improve the condition of scientific and engineering research equipment and facilities in academic institutions. It consists of two components, one for acquisition or development of major research instrumentation and the other for the improvement of research facilities. This solicitation concerns only the instrumentation component.

The goals of the instrumentation component of ARI are to 1) support the acquisition, through purchase, upgrade or development, of major state-of-the-art research instrumentation at U.S. institutions; 2) improve access to and increase use of modern research instrumentation for research and education by scientists, engineers and graduate and undergraduate students; 3) foster the development of the next generation of research instrumentation; and 4) promote partnerships between academic researchers and private sector instrument developers.

ARI assists in the acquisition or development of research instrumentation not usually available through other NSF

programs. Maintenance and technical support associated with these instruments are also supported. Proposals may be for a single instrument, a large system of instruments, or multiple instruments that share a common research focus. Computer systems, clusters of advanced workstations, networks and other information infrastructure components necessary for research are encouraged.

Awards will range from \$100,000 to \$2 million. Cost sharing at the level of 30 to 50 percent of total eligible projects costs is required with the 50 percent matching level being strongly encouraged. The cost sharing may come from any private or nonfederal public source and may be in cash or in kind.

NSF will accept only two proposals from each institution. The University's proposals are being coordinated by Charles Louis, assistant vice president for research and associate dean of the Graduate School. Preproposals should be made to Louis and include the following:

1. A one or two paragraph description of the project (i.e., the instrumentation and the research/research-training activities it would support).
2. A list of researchers involved in the proposal, noting who will be the principal investigator and who is currently funded by NSF. Note that the most competitive proposals are those that document that a significant number of the investigators are currently supported by NSF. NSF is less likely to support activities that will benefit medical research, which is more appropriately supported by NIH.
3. A preliminary budget identifying sources of internal matching funds. Units will be expected to provide at least 50 percent of the match/cost-sharing. Applicants cannot be assured of matching institutional funds but requests will be considered. Such requests need endorsement from the appropriate dean and vice president/provost/chancellor.

Preproposals are due in Louis's office by **Monday, December 12**. Louis is in 306 Northrop, but is scheduled to move in November to 420 Johnston. Please check the address by phoning 625-2356.

The NSF application deadline is **March 1, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Office of Science and Technology Infrastructure, Academic Research Infrastructure, NSF, Room 1270, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1040; ari@nsf.gov.

■ National Science Foundation

Biosystems Analysis and Control

The Divisions of Engineering and Biological Sciences, National Science Foundation (NSF) have announced the continuation of the initiative on Biosystems Analysis and Control.

Although the nervous system interprets intricate biological signals and controls complex biological functions with apparent ease, the analysis of how biological signals are processed and controlled has proven difficult. Whereas concepts from systems engineering are clearly relevant to these challenges, past research has often not paid sufficient attention to real-time, nonlinear, stochastic systems capable of learning. To advance technology, it appears most promising to extend the understanding of how natural biological systems behave in order to facilitate the development of new approaches for systems modeling, analysis and control which could benefit both biological and physical systems.

The goal of this cross-disciplinary initiative is to develop innovative techniques to analyze and control complex dynamic systems by extending the understanding of how biological systems interpret sensory signals, control physiological processes and adaptively monitor and control bioprocesses.

Proposals are invited on topics including, but not limited to:

- Design of new mathematical tools which will allow the use of engineering techniques to further the understanding of living systems and, reciprocally, the use of information obtained from biological systems to further develop engineering methods.
- Development and application of innovative dynamic system modeling and signal processing techniques to analyze and characterize biological systems.
- Elucidation of the capabilities of natural biological systems as flexible general control devices.
- Development of new engineering adaptive control system architectures based on biological prototypes.
- Application of biologically inspired control strategies in either biological or nonbiological systems.
- Development of highly innovative artificial neural network designs which could function as potential models of vertebrate neural systems.
- Development of software and/or hardware models of neural circuits/structure involved in information processing and/or the control of behavior.

- Improved methods for identifying, representing and analyzing hierarchical and self-organizing systems.

Up to \$1.27 million will be available for this competition in FY95; it is anticipated that 8 to 16 awards will be made, ranging from \$60,000 to \$120,000 per year for up to three years. Cross-disciplinary research teams that include neuroscientists, engineers and computer scientists are highly encouraged.

The application deadline is **February 1, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Contact personnel at NSF are listed in the announcement.

■ National Science Foundation

Alan T. Waterman Award

Congress established the Alan T. Waterman Award in August 1975 to mark the 25th anniversary of the National Science Foundation and to honor its first director. The annual award recognizes an outstanding young researcher in any field of science or engineering supported by the National Science Foundation. In addition to a medal, the person selected receives grants of up to \$500,000 for up to three years for scientific research or advanced study in the mathematical, physical, medical, biological, engineering, social or other sciences at an institution of the recipient's choice.

Candidates must be U.S. citizens or permanent residents and must be 35 years of age or younger or not more than 5 years beyond receipt of the Ph.D. degree by December 31 of the year in which nominated. Candidates should have completed sufficient scientific or engineering research to have demonstrated, through personal accomplishments, outstanding capability and exceptional promise for significant future achievement. In addition, candidates should exhibit quality, innovation and potential for discovery in their research.

Nominations must be prepared on specific forms; the application deadline is **December 31, 1994**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the Alan T. Waterman Award Committee, Susan E. Fannoney, Executive Secretary, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1096.

Program Information

Great Lakes Protection Fund

The mission of the Great Lakes Protection Fund is to identify, demonstrate and promote regional action to enhance the health of the Great Lakes ecosystem. The Fund has four primary goals: 1) prevent toxic pollution; 2) support effective cleanup approaches in areas of concern, as designated by the International Joint Commission; 3) support natural resource stewardship; 4) clarify effects of toxic pollution on humans and wildlife.

The Fund encourages a range of strategies to meet these goals, including demonstration projects, applied research, data management, policy analysis and evaluation, regional coordination, roundtable discussion, education for action, promotion of public dialogue through the media, conflict resolution, program planning and development, and others.

The Fund also provides small discretionary travel and planning grants. Travel grants are occasionally made to organizations with limited budgets so they may attend meetings at which their presence is important. Funds are limited and are *not* to be used for lobbying, sponsoring speakers at conferences nor for mass membership attendance at conferences.

Planning grants are made in recognition that the Fund's guidelines and goals are rigorous and ambitious, especially in regard to regional action and collaboration. In order to assist potential applicants, the Fund provides small planning grants to help organizations test the feasibility of a new idea or method; develop or strengthen regional, basin-wide collaborations; assess the strength of a purported regional need; or develop a regional plan of action.

The Fund considers intra-basin collaboration essential. It encourages projects that bring together experts and create partnerships to resolve problems, including citizens from academia, government, business and environmental groups.

Preproposals are due **January 2, 1995**, and **July 1, 1995**. Full proposals are due in March and September. For further information contact the Great Lakes Protection Fund, 35 East Wacker Drive, Suite 1880, Chicago, IL 60601; 312/201-0660.

American Institute of Indian Studies

Short-Term Fellowships

Short-term fellowships (for less than four months) are available for research in India. The University of Minnesota is a member of the American Institute of Indian Studies, which makes faculty at the University eligible to apply for these fellowships in a special winter competition.

Applications are due **December 31, 1994**. Further information and application forms may be obtained from Frederick M. Asher, 107 Jones Hall; 624-4500.

Advanced Technology Award Comes to Minnesota

The NIST Advanced Technology Program recently announced 41 awards totalling \$170 million for five-year technology development programs. More than 100 companies and universities will participate in the R&D projects. Two of the awards came to Minnesota, to joint ventures based at 3M Company in St. Paul.

The ATP program, administered by the U.S. National Institute of Standards and Technology, matches private funds for high-risk technology and industry development. NIST's October announcement lists 16 awards, totalling \$72 million, for "Information Infrastructure for Healthcare;" 13 awards, \$56 million, for "Tools for DNA Diagnostics;" 11 awards, \$40 million, for Component-Based Software; and one award, \$1.5 million, for "Computer-Integrated Manufacturing for Electronics." The awards are contingent on successful negotiations for cooperative research agreements between NIST and the awardees.

The two Twin Cities projects are headed by 3M's department for health information systems.

3M's project titled "Healthcare Lifetime Data Repository Infrastructure" will work on infrastructure for integrating information systems in the healthcare industry. NIST awarded it \$2 million.

3M's "Development of an Episode Grouper," awarded \$1.7 million, will "Enable the use of episodes of treatment as a natural and logical unit for understanding and controlling healthcare resources by defining for the first time episodes of treatment for at least 95 percent of the diseases and conditions, alone and in combination, found in the enrolled population of a typical managed-care organization."

Processing Type 38s

The new effort-reporting system permits the processing of type 38s for 90 days past the quarter being certified. For example, for the quarter July through September, type 38s may be processed until December 31. However, for grants ending during those months, deadline for the filing of the financial report must be taken into consideration.

For example, if a grant ends July 31 and the reporting deadline is 90 days, the report is due to the agency October 31. Type 38s affecting the grant *must be processed* in order to permit their inclusion in the financial report.

"Type 38s" are journal vouchers for adjusting payroll. Questions concerning how the timing of type 38s impact the submission of financial reports should be directed to Sandra Kenyon at 624-6026.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
October 1994	430	\$ 71,937,193
Awards Processed		
October 1994	385	33,973,487
Proposals Submitted		
July 1994 - October 1994	1,284	227,407,295
Awards Processed		
July 1994 - October 1994	1,293	134,260,322
Proposals Submitted		
July 1993 - October 1993	1,212	174,949,925
Awards Processed		
July 1993 - October 1993	981	89,035,764

Active Immunization Using Siderophore Receptor Protein

Lawrence B. Schook, Veterinary Pathobiology
 K. H. Choi, Veterinary Pathobiology
 Willmar Poultry Company
 \$60,521 - 08/01/94-07/31/95

Off-Site Early Weaning: Feasibility, Logistics, Financial and Biological Considerations

Vitelio Uterea, Clinical and Population Sciences
 U.S. Department of Agriculture
 \$39,934 - 05/15/94-05/31/95

National Needs Training Grant in Biotechnology

Thomas W. Molitor, Clinical and Population Sciences
 Michael P. Murtaugh, Veterinary Pathobiology
 U.S. Department of Agriculture
 \$108,000 - 09/01/94-08/31/99

Training Program for Neighborhood Organizers

Jay Clark, Center for Urban and Regional Affairs
 Hennepin County
 \$90,000 - 06/07/94-12/31/94

Public Opinion on Alcohol Control Policies

Rhonda Jones, Epidemiology
 NIH, NIAAA
 \$82,753 - 08/01/94-07/31/95

Coronary Artery Risk Development in Young Adults

John M. Flack, Epidemiology
 NIH, NHLBI
 \$376,643 - 12/01/94-05/31/95

Pharmaceutical Services to Minnesota Correctional Facilities

Richard L. Kingston, Pharmacy Practice
 St of MN, Department of Corrections
 \$250,000 - 07/01/94-06/30/95

Skeletal Muscle Excitation-Contraction Coupling

Ladora V. Thompson, Physical Medicine and Rehabilitation
 Johns Hopkins University
 \$126,895 - 09/01/94-08/31/95

Sewing Cuff Healing Study

John E. Foker, Surgery
 St. Jude Medical
 \$98,844 - 06/15/94-06/14/95

Neural Control of Adrenocortical Function

William C. Engeland, Surgery
 National Science Foundation
 \$82,996 - 06/01/94-05/31/95

Medications Development for Drugs of Abuse

Dorothy Hatsukami, Psychiatry
 Paul Pentel, Pharmacology
 NIH, NIDA
 \$1,380,729 - 09/30/94-08/31/95

Aggregation/Disposition of B-Amyloid in Alzheimer Disease

Patrick Mantyh, Psychiatry
 NIH, NIA
 \$118,077 - 09/10/94-06/30/95

Evaluation of School-Affiliated Health Centers

Michael D. Resnick, Health Services Administration
 State of North Carolina
 \$40,000 - 05/01/94-06/30/95

Correction of Murine Immunodeficiencies in Utero

Bruce Blazar, Pediatrics
 NIH, NHLBI
 \$141,196 - 08/10/94-05/31/95

In Utero Transfer of Murine Hematopoietic Cells in Mice

Bruce Blazar, Pediatrics
 NIH, NHLBI
 \$208,461 - 08/10/94-07/31/95

Recovery of Intervertebral Disc after Enzyme Treatment

Theodore R. Oegema, Jr., Orthopaedic Surgery
 NIH, NIAID
 \$204,799 - 09/15/94-08/31/95

Magnetic Resonance Spectroscopy (MRS) Characterization of Focal Cerebral Ischemia

Paul J. Camarata, Neurosurgery
 NIH, NINDS
 \$72,699 - 09/30/94-09/29/95

Clinical Evaluation of an Experimental Urinary Catheter

James R. Johnson, Medicine
 Barbara Kringstad, Medicine
 Rochester Medical Corporation
 \$190,110 - 07/01/94-06/30/96

Multicenter Study to Compare the Safety and Efficacy of Atorvastatin Versus Colestipol

Donald B. Hunninghake, Pharmacology
 Parke-Davis Pharmaceutical Research Division
 \$100,000 - 04/01/94-10/31/95

Malignant Conversion of Large-Bowel Cancer and Its Prevention

Lee W. Wattenberg, Laboratory Medicine and Pathology
 American Cancer Society
 \$100,000 - 07/01/94-06/30/95

Buffering Calcium Transients in Neurons

Stanley A. Thayer, Pharmacology
 National Science Foundation
 \$80,000 - 08/01/94-07/31/95

Breast Cancer Resistance to Cyclophosphamide and Other Oxazaphosphorines

Norman E. Sladek, Pharmacology
 USDOD, Army
 \$748,163 - 10/01/94-09/30/98

Retinal/Sensory Growth Cone Inhibition by Proteoglycans

Diane M. Snow, Cell Biology and Neuroanatomy
 NIH, NEI
 \$102,680 - 09/30/94-09/29/95

Kerlan Collection Manuscripts and Illustrations Project

Merry Schellinger, University Libraries
 National Endowment for the Humanities
 \$96,337 - 07/01/94-06/30/96

Water Quality and Fisheries Simulations for Changed Climatic Conditions

Heinz Stefan, St. Anthony Falls Hydraulic Laboratory
Donald G. Baker, Soil Science

Environmental Protection Agency
\$106,359 - 09/15/94-09/14/95

Evaluation of Side-Arm Thermosiphon Heat Exchanger

Jane H. Davidson, Mechanical Engineering

U.S. Department of Energy
\$50,000 - 05/15/94-05/14/95

New Priorities in a Changing U.S. Economy

Avner Friedman, Institute for Mathematics and its Applications
Robert T. Kudrle, Humphrey Institute

USDOD, Air Force
\$2,000,000 - 09/30/94-09/29/97

Computational Problems in Fluids and Materials

John Lowengrub, Mathematics

National Science Foundation
\$47,500 - 06/01/94-05/31/95

Harmonic Analysis, Special Functions and Separation of Variables

Willard J. Miller, Mathematics

National Science Foundation
\$60,000 - 04/01/94-03/31/97

The Marine $^{234}\text{U}/^{238}\text{U}$ Record and the Timing of the Marine $^{18}\text{O}/^{16}\text{O}$ Record

Lawrence Edwards, Geology and Geophysics

National Science Foundation
\$151,090 - 04/29/94-05/31/95

Post-Illinoian Vegetational and Climatic History of the Middle West: Comparisons with the European History

Herbert E. Wright, Geology and Geophysics

National Science Foundation
\$80,005 - 05/15/94-04/30/95

Piezoelectrically Actuated Mirror Arrays

Dennis L. Polla, Electrical Engineering

Aura Systems, Inc.
\$52,381 - 05/23/94-12/30/94

Analytic Element Modelling of Coastal Aquifers

Otto D. Strack, Civil and Mineral Engineering

Environmental Protection Agency
\$126,978 - 09/01/94-08/31/96

Alternative Prototype Strategies for Real-Time Traffic Control Strategy

Yorgos J. Stephanedes, Civil and Mineral Engineering

Federal Highway Administration
\$479,382 - 06/06/94-05/25/95

Photophysical Properties of Organic Liquids at High Energy

Sanford Lipsky, Chemistry

U.S. Department of Energy
\$120,000 - 09/01/94-08/31/95

Instrument Development Plan for Chemistry at the University

Wayne L. Gladfelter, Chemistry

National Science Foundation
\$600,000 - 09/01/94-08/31/97

Modeling of the Rapid Solution Growth of KDP Crystals

Jeffrey J. Derby, Chemical Engineering and Materials Science

Lawrence Livermore National Laboratory (DOE prime)
\$64,997 - 09/29/94-09/30/95

Molecular Symmetry and Polymer-Polymer Thermodynamics

Frank S. Bates, Chemical Engineering and Materials Science

National Science Foundation
\$97,000 - 07/01/94-06/30/95

Solid Oxide Intercalation Hosts for Lithium

William H. Smyrl, Chemical Engineering and Materials Science

David A. Shores, Chemical Engineering and Materials Science
Illinois Institute of Technology (Army, prime)
\$144,297 - 08/01/94-04/21/95

Preparing Future Faculty: The Minnesota Model

Mark L. Brenner, Horticultural Science

Carol Carrier, Curriculum and Instruction

Association of American Colleges and Universities
\$159,800 - 07/01/94-06/30/96

Studies to Evaluate the Effectiveness of Interventions to Prevent or Reduce Childhood Lead Poisoning

Amos S. Deinard, Community-University Health Care Center

Centers for Disease Control
\$346,187 - 09/30/94-09/29/95

Institutional and Political Issues of Congestion Pricing

Lee Munnich, Humphrey Institute

Candace Campbell, Humphrey Institute

Gary DeCramer, Humphrey Institute

Federal Highway Administration
\$950,000 - 06/10/94-04/30/96

Clinical Studies on Opioids and Muscle Pain Mediators

Lois J. Kehl, Dentistry

Kenneth M. Hargreaves, Dentistry

NIH, NIDA
\$113,345 - 09/30/94-08/31/95

Microbial Risk Factors Associated with Baby-Bottle Caries

Pamela R. Erickson, Dentistry

Charles Schachtele, Dentistry

Joel Rudney, Oral Sciences

NIH, NIDR
\$35,083 - 09/15/94-09/14/95

Biosynthetic Pathway for Streptococcal Glycoproteins

Pamela R. Erickson, Dentistry

NIH, NIDR
\$100,000 - 09/30/94-09/29/96

Role of Antibiosis and Competition in Biocontrol of Potato Scab

Neil A. Anderson, Horticultural Science

Janet L. Schottel, Biochemistry (CBS)

Linda L. Kinkel, Plant Pathology

U.S. Department of Agriculture
\$100,000 - 08/01/94-07/31/96

Edible Films and Minimally Processed Ready-to-Eat Foods Structure, Function and Microbial Concerns

Francis F. Busta, Food Science and Nutrition (Ag)

Edmund A. Zottola, Food Science and Nutrition (Ag)

U.S. Department of Agriculture
\$108,000 - 09/01/94-08/31/99

Minnesota Pesticide Management Plan Development

Roger L. Becker, Agronomy and Plant Genetics

St of MN, Department of Agriculture

\$40,788 - 07/01/94-06/30/95

Management - Food and Agribusiness Area

Robert P. King, Agricultural and Applied Economics

Benjamin Senauer, Agricultural and Applied Economics

U.S. Department of Agriculture
\$108,000 - 09/01/94-08/31/99

Arches National Park Capacity - Phase III

David Lime, Forest Resources

USDI, National Park Service
\$44,000 - 07/26/94-09/30/94

Pilot Study for Inventory of Drained Wetlands

Lloyd P. Queen, Forest Resources

James A. Perry, Forest Resources

St of MN, Department of Natural Resources
\$56,352 - 03/01/94-09/30/95

Spatial Analysis and Modeling Facilities for Natural Resources and Environmental Sciences

Marvin E. Bauer, Forest Resources
David F. Grigal, Soil Science
John R. Tester, Sr., Ecology, Evolution and Behavior
National Science Foundation
\$315,000 - 10/01/94-09/30/96

Mathematical Sciences Computing Research Environments

Gary W. Oehlert, Statistics
National Science Foundation
\$73,769 - 07/01/94-06/30/95

Predictive Methods

Seymour Geisser, Statistics
NIH, NIGMS
\$97,598 - 07/01/94-06/30/95

Automating Guidance and Response for Group Decision-Making

Marshall S. Poole, Speech-Communication
Salvatore March, Information and Decision Sciences
Geraldine Desanctis, Information and Decision Sciences
National Science Foundation
\$110,557 - 03/01/94-09/30/95

Molecularization of Genetics

C. K. Waters, Philosophy
National Science Foundation
\$65,611 - 07/15/94-12/31/96

Preparing for AmeriCorps/Youthworks

Gary W. Leske, Vocational and Technical Education
Rob Shumer, Vocational and Technical Education
St of MN, Commission on National and Community Service
\$30,000 - 07/25/94-12/31/94

School-to-Work Outreach Project: Ensuring the Participation of Youth

David R. Johnson, Educational Psychology
Richard F. Weatherman, Educational Psychology
U.S. Department of Education
\$109,717 - 10/01/94-09/30/95

Creating Capacities Within: Site-Based Staff Development for Inclusive Schooling of Students with Severe Disabilities

Jennifer York, Educational Psychology
U.S. Department of Education
\$165,000 - 09/01/94-08/31/95

Evaluation of Scope Sequence and Coordination

Frances Lawrenz, Curriculum and Instruction
National Science Teachers Association
\$125,759 - 05/01/94-01/31/95

Predocutorial Fellowship in Biological Sciences

Mary E. Kent, Plant Biology
M. D. Marks, Genetics and Cell Biology
Howard Hughes Medical Institute
\$80,100 - 08/15/94-08/14/97

Molecular Genetic Analysis of Mealybug Transmissibility of Badnaviruses

Neil E. Olszewski, Plant Biology
Benham E. Lockhart, Plant Pathology
U.S. Department of Agriculture
\$100,000 - 07/15/94-07/31/96

Real-Time Servo Control Using Computer Vision

Nikolaos Papanikolopoulos, Computer Science
Sandia National Laboratory
\$103,850 - 10/01/94-09/30/95

Genes Regulating Nitrate Assimilation in Chlamydomonas

Paul A. Lefebvre, Genetics and Cell Biology
U.S. Department of Agriculture
\$110,000 - 08/01/94-07/31/96

Teaching Evolution and Ecology using Conceptual Change Theory

John Beatty, Ecology, Evolution and Behavior
Richard Peifer, General Biology Program
Bruce Fall, Ecology, Evolution and Behavior
National Science Foundation
\$72,120 - 08/15/94-07/31/96

Group Dynamics, Reproductive Success and Habitat Utilization

Anne E. Pusey, Ecology, Evolution and Behavior
Craig Packer, Ecology, Evolution and Behavior
National Science Foundation
\$83,569 - 06/03/94-07/31/95

Bacterial Mineralization of Atrazine as a Model

Lawrence P. Wackett, Gray Freshwater Biological Institute
Michael J. Sadowsky, Soil Science
U.S. Department of Agriculture
\$139,000 - 09/15/94-09/30/97

High School Summer Research Program

Alan B. Hooper, Genetics and Cell Biology
Linda J. Brady, Food Science and Nutrition (Ag)
National Science Foundation
\$82,576 - 03/15/94-07/31/95

Origin and History of Glacial Deposits in West-Central Minnesota

James F. P. Cotter, Geology, Morris
National Science Foundation
\$50,967 - 04/14/94-11/30/95

Red River Economic Developers' Network

Jerry Nagel, Business, Crookston
Northwest Minnesota Initiative Fund
\$30,000 - 08/01/94-09/30/95

Fixed-Delay Tree Search with Decision Feedback on $d = 0$ Codes

Jay Moon, Electrical Engineering
Seagate Technology Corporation
\$57,378 - 09/01/94-08/31/95

A National Study of Assisted Living for the Frail Elderly

Rosalie A. Kane, Institute for Health Services Research
Research Triangle Institute
\$30,003 - 10/01/94-03/31/97

Pedestrian Control at Intersections

Nikolaos Papanikolopoulos, Computer Science
St of MN, Department of Transportation
\$45,000 - 09/01/94-08/30/95

Vehicle Following (Platooning) Using CCD Cameras

Nikolaos Papanikolopoulos, Computer Science
St of MN, Department of Transportation
\$45,000 - 10/01/94-09/30/95

Signal Processing for Digital Videocassette Recorders

Jay Moon, Electrical Engineering
Samsung Electronics Company, Ltd.
\$86,255 - 06/01/94-05/31/95

Model-Based Robotic Visual Servoing

Nikolaos Papanikolopoulos, Computer Science
National Science Foundation
\$55,000 - 08/15/94-07/30/97

Further Validation of the Adolescent Assessment Battery

Ken Winters, Pediatrics
Randy Stinchfield, Pediatrics
NIH, NIDA
\$447,190 - 09/30/94-08/31/97

Neural Control of Adrenocortical Function

William C. Engeland, Surgery
National Science Foundation
\$82,996 - 06/01/94-05/31/95

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number 612/624-4843
 Financial Reporting Fax Number 612/626-0321

	<u>Name</u>	<u>Number</u>	<u>Internet</u>
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Kevin McKoske	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only) Voluntary Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Carl Anderson	626-8267	carl@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Sandra Kenyon	624-6026	
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort HELP Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu

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RESEARCH REVIEW

Office of Research and Technology Transfer

January 1995

Rebuilding Academic Health Care

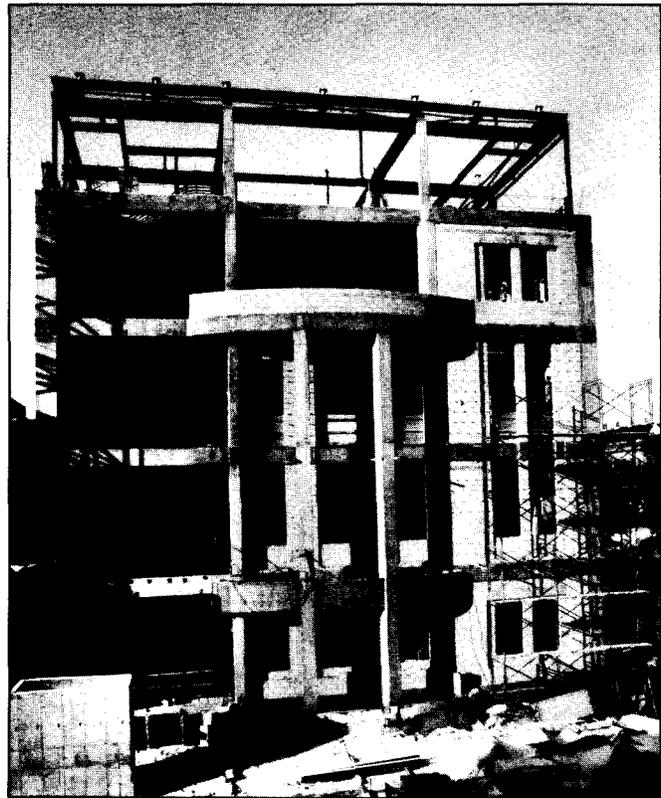
Three Authorities Describe Federal Funding Prospects

In this issue, three University experts speak on the coming changes to academic health centers and the U.S. Congress.

William Jacott (page 3), assistant vice president for health sciences, describes the effects that insurance reform has on clinical research, and the work of the Minnesota Medical Education and Research Costs advisory task force (MERC). Jacott is a member of MERC. He is also an associate professor of family practice and a trustee of the American Medical Association.

Thomas Etten (page 5), the University's federal relations officer, predicts the breadth and amount of coming federal budget cuts.

Ronald Franks (page 8), dean of the University's Duluth School of Medicine, speaks of the need for new, secure funding sources for medical education and research, and about training for primary-care physicians.



The Basic Sciences/Biomedical Engineering Building going up on the Minneapolis campus

Inside

Document Approval: In by 10 — Out by 10	2
V.P. Jacott and State Task Force Study the Cost of Academic Health	3
How Will the GOP Contract Affect the University?	5
Congressional Budget Promises for 1995	7
Duluth Medical Dean Wonders How to Fund Medical Education	8
Departmental Keys to Successful Effort Certification	10
IRB: Human Subjects Committee	11
Graduate School News	12 - 15
Program Information	16 - 19
Faculty Research, Training and Service Awards	20 - 22

Happy New Year!

ORTTA

In by 10 — Out by 10

Due to the inefficiencies created by documents being "walked through" ORTTA for approval and the attendant disruption created by the process, ORTTA has instituted a new procedure to handle emergency approval of documents.

Only the following documents requiring emergency approval and received on or before 10:00 a.m. will be reviewed, approved and available for pickup on or after 10:00 a.m. on the next business day:

- Documents with special handling cover sheets
- POT's
- Travel requests
- Bookstore IVs

There will be a box for drop-off and pickup in the ORTTA reception area.

ORTTA appreciates your cooperation with this new procedure.



Effort coordinators, see page 10 for important information.

RESEARCH REVIEW

Volume XXIV/Number 7

January 1995

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

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Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994;** this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; Linda Lorenz, 624-6862; or Aubrey Gold, 626-9895.**

07/01/94
06/30/95

Research

On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hornel	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates.

	Academic	Graduate Students*	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	24.6%	36.3%	31.8%
7/1/96 - 6/30/97	24.9%	37.3%	32.7%

* Increase the indicated rates by 7.6 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertation; or if 2) the student is employed for more than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009.**

Rate changes will be reflected in this section.

Jacott and State Task Force Study the Cost of Academic Health

On December 13, William Jacott, assistant vice president for health sciences, spoke with Research Review about federal funding for the academic health center and about the task given to the Minnesota Medical Education and Research Costs advisory task force (MERC). MERC was invented by the 1993 legislature, then recreated with new members by the 1994 legislature. Its 20 members were appointed by the Minnesota Department of Health and include four members of the University: Jacott; Ronald Franks, professor of medicine, dean of the Duluth School of Medicine; Sandra Edwardson, dean of the School of Nursing; and Robert Petzel, VA Medical Center, associate professor of medicine. MERC's charge is to study the impact of health-care reform on the financing of medical education and research, to explore new funding mechanisms, and to report to the 1995 legislature in mid-February. Jacott is also an associate professor of family practice and a Trustee of the American Medical Association.

Research Review: Given the uncertainty at the federal level, can MERC deliver something useful to the legislature in February?

Jacott: We can deliver something helpful, but not complete. It's hard to know what is going to happen at the federal level, but I think we [MERC] are going to have an impact regardless of federal reforms. With increased managed care and increased concern about cost, buyers are going to be looking for the best deals, and an academic health center isn't necessarily the best deal. That's the problem. We aren't going to have all the costs and all the workforce issues solved by February.

We are trying to determine the current cost of medical education and research in the state, both in the public and private sectors, and what proportion of those total costs is securely funded and what portion is insecure. Once funding gaps are identified, then you have to ask what might be a source of funds? All payers [of patient fees] or just Medicare? Public sources or private sources? And what is the mechanism to divide it up? Who do you send the check to?

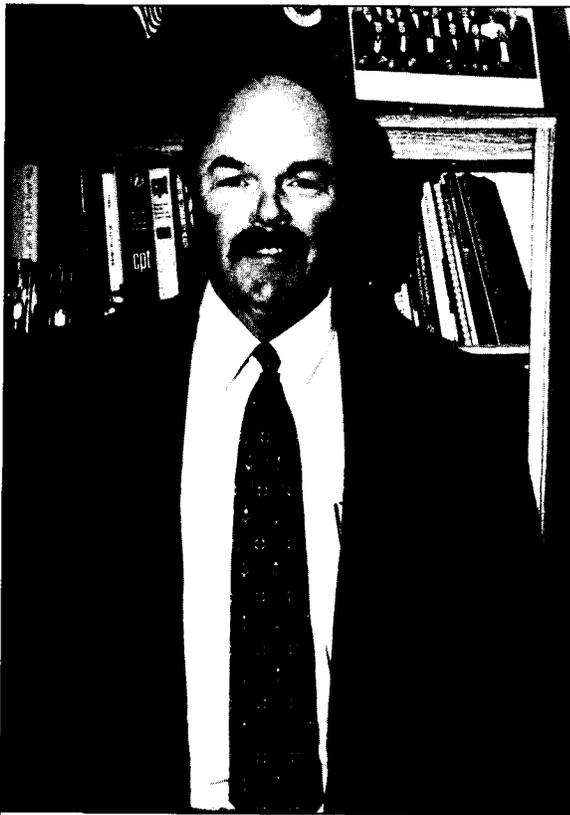
Research Review: What if Medicare's payments for the cost of medical education [payments for indirect medical educa-

tion (IME) and for direct graduate medical education (DGME)] decrease?

Jacott: It is hard to know what is going to happen with that. It is an important part of funding for residency training, but it is different for each hospital and each year because it is based on a head count of residents, and because the indirect adjustment is based on the direct adjustment. So it's a moving target. But the real problem is the target is going to move downward.

We had expected the cuts in the IME; there's been talk of that for several years. Medicare is vulnerable, and that's going to affect funding for medical education. But medical education is not a big total. There will be cuts, but they won't accomplish much toward balancing the budget.

We are already seeing Medicare pay less for clinical research.



William Jacott, assistant vice president for health sciences

Research Review: What is the pathway from patient fees to funding for clinical research?

Jacott: In the past, insurance payments for patient care have covered a great deal of clinical research, but now insurers are cost-accounting in a more rigid way and excluding charges that they determine are for research.

Let's take an example: You have a patient in the hospital, and you're studying the outcome of a certain drug. Maybe you do more blood tests than you ordinarily would. Maybe the drug can be evaluated with daily MRIs [magnetic resonance images]. Maybe the patient has to stay a little longer for observation. In the past, insurers and the government would say

"We understand that. We will pay for that as part of a hospital stay." But now every single charge is evaluated as to necessity. "One blood test on admission and one on discharge we will pay for," they say. "Twenty-five we won't.

[Next Page]

Jacott

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One MRI we will pay for; seven we won't." That is the kind of danger in which we find clinical research.

Research Review: Might insurers argue that those extra blood tests and MRIs are the responsibility of the pharmaceutical makers?

Jacott: It may be. But much of clinical research is already funded by private industry, and it's having trouble with funding, too. Drug prices are being attacked, and they have had to cut R&D.

Research Review: If you shift costs to private corporations, does that mean increased headaches regarding conflicts of interest and more people doubting the objectivity of clinical work?

Jacott: No, I don't think that's a factor. You have to make sure the patients are informed that they're on a protocol sponsored by a private company that might manufacture the drug. As long as everyone is informed, I don't think there is a problem.

Research Review: Do you see any hope that Congress will provide alternatives to Medicare funding?

Jacott: The Republican plan is rather silent on education and research. So I don't see a whole lot happening for education and research in this next session of Congress, and I don't foresee a "national workforce commission" like they talked about last year. The main concern is the big cuts in Medicare funding.

Research Review: So you don't foresee renewed federal proposals to regulate the number of generalists we educate?

Jacott: I think there will be some pressures to focus IME payments for certain kinds of training, just like NIH is saying it will pay for certain kinds of research. So there will be increased focus on primary care as opposed to other specialties. I think there will also be increased funding for training minorities.

MERC is looking at the health care work force and how many of which kind of health professionals we need. That's difficult at a state level. People trained in other states come here; people train here, then go to other states. A workforce study can determine the numbers that we need within Minnesota, but then to make recommendations about training numbers—that's a challenge. Look at Mayo [Mayo Medical School in Rochester]. About three-quarters of Mayo medical students are not from Minnesota, and a lot of them go off and practice somewhere else.

I think it is important for the private sector to get together and study workforce issues. It needs to be a national initiative and a public-private process, but I don't see the stimulus

coming out of the public sector at the moment. By private sector I mean the health-care providers, the health-care professions, the hospitals.

Research Review: The 1993 MERC published some rough estimates regarding the health care workforce and funding in Minnesota. Will the 1994 MERC refine those numbers?

Jacott: No, at this point we are working on principles and methodology to determine the numbers, and trying to develop RFPs [requests for proposals] for the experts who will determine our workforce and funding needs. A politically appointed task force doesn't have the expertise for the surveys and calculations.

Research Review: So shall we expect major changes in the University's Academic Health Center in the next year? Over the next five years?

Jacott: As far as finances are concerned we have major concerns in the immediate future. One of our biggest concerns here is having enough patients to do our education and research. Some people say, "That's easy. Just send the students and the researchers out to the community." The standards of patient care are comparable, but there needs to be a blend between the academic health center and the community with regard to education and research.

Research Review: What can the University community do to prepare for and influence coming events?

Jacott: First of all we need to recognize the changes coming. (I think we have done that.) We need to be proactive, not reactive. We need to be cost-conscious. (The hospital, in particular, has done that. It has cut costs significantly so that it is competitive.) And we need to pull together so that we are working as a team rather than as 20 or 25 individual units.

In an academic health center you have the advantage of interdisciplinary education and research—and we are going to see more of it. Why not have just have one area where all the biology is taught for the dentists and nurses and physicians and teachers? There is no reason to duplicate everything. As funding for higher education diminishes, we will look toward more interdisciplinary programs, as a way of preparing people for the future, but also as a way of avoiding duplication.

We also need to stay in touch with our state legislators and the members of Congress from our state, and keep them informed about our concerns. Dr. Brody [William Brody, provost of the academic health center] is spending a significant amount of time meeting with state legislators. We work closely with the University's federal relations person [Tom Etten] to make sure that our congressional delegation is well-informed, and at the academic health center we have our own state lobbyist, Vik Vikmanus.

By Phil Norcross

How Will the GOP Contract Affect the University?

An Interview with Tom Etten, Federal Relations Officer

Research Review: *What will happen to federal budgets next year?*

Etten: The president will send his budget to the hill, it will be dismissed by the new majority, and then the Republicans will submit their own budget for fiscal year 1996. I think it's widely agreed that the House of Representatives will quickly and easily pass its budget, and the Senate will more than likely follow suit.

What could become a major factor in the entire budget process is the constitutional amendment to balance the federal budget—one of the major points in the "Contract with America." It is beginning to look more and more as if both the House and Senate will pass the amendment resolution, which will then need ratification by 38 states. It does not need the signature of President Clinton.

If Congress passes the balanced budget amendment before it completes its own fiscal '96 budget, tremendous pressure will develop to consider severe and drastic spending cuts. If I were involved in federal research I would closely follow the progress of the balanced budget amendment. It could have a tremendous impact upon federal research funding for the next six years.

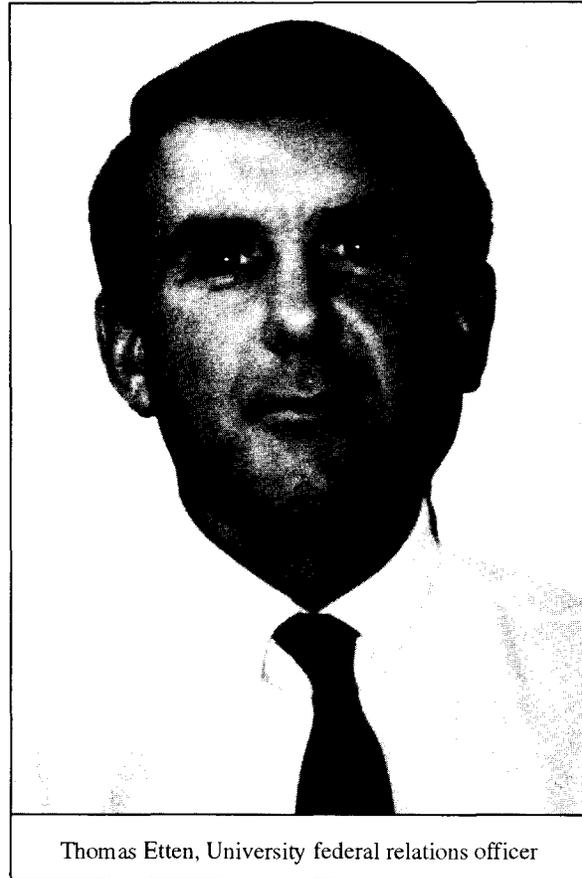
Research Review: *Can we trust the interpretation, published by the Congressional Democratic Study Group, that the "Contract with America" means cutting the federal budget by 26 percent over the next five years?*

Etten: Again, a lot depends on whether Congress passes and the states ratify a balanced budget amendment. If they do, then not only could we see spending cuts in the 26 percent to 30 percent range over the next five years, but we could also see complete federal agencies abolished. The departments of energy, HUD, and transportation have been prominently mentioned in such discussions in the past few weeks.

Research Review: *Will less federal government and more state responsibilities help or hurt Minnesota?*

Etten: An interesting dynamic is beginning to develop between Congress and the governors, 30 of whom are Republican now. The governors are getting nervous. They may be some of our best allies.

I don't buy the argument that, because Minnesota sends more money to Washington than Washington sends back to Minnesota, less federal government is good for us. How does the state of Minnesota take up the burden of funding research, environmental programs, social and educational



Thomas Etten, University federal relations officer

issues? If the federal government gets out of the student financial aid business, what's that do to Minnesota? What if they cut NSF and NIH and states are left with no alternative, if they want to continue research at their universities, than to come up with the money themselves?

The governors support less government; they do not support unfunded mandates. There has been talk recently of abolishing hundreds of federal social programs and replacing them with grants to state governments. That would give states more autonomy with respect to implementing programs, but the catch is, with an eye on reducing the federal deficit, substantially less money will be returned to the states than is now provided. The states would have to make up the difference.

Research Review: *What can we expect for the specific federal programs that help fund the University?*

Etten: The programs we're concerned about will be hit hard by a balanced budget. NSF, NIH, education and student financial aid are part of the "domestic discretionary budget," which is less than 20 percent of total federal spending. The

[Next Page]

Etten

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entitlements—chiefly Social Security and Medicare—are politically difficult to cut, and the Republicans seem interested in defense spending at least at the level of the past few years. That leaves domestic discretionary spending. Those programs are very vulnerable. [About 60 percent of the federal budget goes for interest payments and entitlements, about 20 percent goes to defense.]

Health-care reform is still going to be an issue. I don't think we'll see a comprehensive health plan. It will be smaller, incremental; it will deal with things at the edges, like malpractice insurance reform, and like controlling the less visible costs of Medicare and Medicaid, namely the fee supplements to teaching hospitals.

But in some instances we may not be in too bad of shape, particularly on the Senate side. The new chair of the Senate

Appropriation Committee, Mark Hatfield of Oregon, cosponsored last year's Harkin-Hatfield amendment to create a biomedical research fund. If I were a biomedical researcher I would be happy that Hatfield is in his position.

Research Review: Will reimbursement for research universities' indirect costs be frozen?

Etten: There is a lot of concern in Congress about the discrepancies in the rates among universities. To freeze those different rates would not be seen by Congress members as an equitable solution. A freeze at 90 percent of the current rate was offered in the '94 and '95 Republican budgets, which were not considered by Congress.

I think the budget we see in January from the Republicans will have either a pause or—what I would bet on—a cap at a particular percentage, in the 40 percent to 50 percent range.

Research Review: Will there be a boom in defense research funding?

Etten: I don't think so. The Republicans have stated that they want enough money for a "strong defense." But the Advanced Technology Program and all of the other defense conversion programs may be halted, and that money spent for arms production. One of the vulnerable areas in the defense budget is research funding.

Research Review: And what about the National Endowments for the Arts and for the Humanities?

Etten: I don't think they'll disappear, but there will be budget cuts in line with what other agencies are cut, and there will be more control than ever over what gets funded.

Research Review: So what should the University community do to prepare for and influence events in Congress?

Etten: We have to make sure we don't overreact to what happens in the House. We should react. We should work hard to educate the Republican party as to what our programs are and why they're important—why student financial aid should continue; why NSF, NIH and basic research should continue. But if we start pointing fingers at the party, it could hurt us in the long run.

Table 1
University of Minnesota Expenditures
Funded by the Federal Government*

University Fiscal Year 1993

National Institutes of Health	\$91,708,964
Other Dept. of Health & Human Services	22,175,964
Dept. of Education	8,789,666
Dept. of Defense	13,070,442
NASA	2,858,390
Environmental Protection Agency	2,418,611
Dept. of Energy	5,463,023
Dept. of Agriculture (includes land-grant appropriations, ARS, CSRS)	10,725,589
Dept. of Interior	1,075,812
National Science Foundation	25,716,392
National Foundation for the Arts and Humanities	173,684
Dept. of Commerce (includes NIST & NOAA)	905,018
Dept. of State	4,570,696
Federal appropriations (chiefly student aid)	11,282,059
<u>Labor, Transport, Justice, HUD, AID, VA, and others</u>	<u>15,476,121</u>
Total**	\$216,410,431

*Includes sponsored research, training and public service; special appropriations; and student aid. Source: "Levels and Trends in Sponsored Programs at the University of Minnesota Fiscal Year 1993," ORTTA, 1994, p. 16.

**The federal contribution was 53% of all sponsored expenditures by the University in 1993. Federally sponsored research, training and public service, totalling \$200 million, was 76% of the total sponsorship for those activities.

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Congressional Budget Promises for 1995

About 350 Republican House candidates, including Gil Gutknecht and James Ramstad of Minnesota, signed onto the "Contract with America" in late September, 1994. The contract makes the following budget proposals for five years, fiscal 1996 through fiscal 2000:

The contract proposes a balanced federal budget by 2002, mandated by an amendment to the U.S. Constitution. The proposal allows for deficits during war or with approval by three-fifths of both houses. Note that a constitutional amendment must be approved by two-thirds of the House, two-thirds of the Senate, and three-fourths of the 50 state legislatures.

The contract also proposes various tax cuts, spending cuts and some new spending. Republican staff of the House Budget Committee estimated that the tax and spending cuts in the contract will have a net cost of \$150 billion. Democratic estimates put the cost of those cuts and a balanced federal budget by 2002 at about \$800 billion; federal spending in the year 2000, they say, will be 74 percent of 1995 spending. The differences are chiefly attributed to different accounting methods and to Republican assumptions that a growing economy will increase federal revenues by \$623 billion by the year 2000.

The contract does not include specific plans to pay for its cost. The Republican staff of the House Budget Committee listed possible cuts. Those related to science, technology and higher education total about \$32 billion, according to reports by three organizations of U.S. universities—the AAU, NASULGC and ACE*—and by a commercial news service, *Washington Fax*. Those possible cuts are listed in table 2. For a list of federal contributions to the University of Minnesota, see table 1.

* Association of American Universities, National Association of State Universities & Land-Grant Colleges, and American Council on Education

Table 2
Possible Cuts in Federal Spending
Fiscal 1996-2000

Decreases from fiscal 1995 spending levels.
As listed by Republican staff of House Budget Committee.
As reported by AAU, NASULGC, ACE, Washington Fax.*

Indirect costs of federally sponsored research at universities, freeze rates at 90% of current levels.	\$1,600,000,000
Medicare's indirect medical education adjustment (IME), reduce. [IME pays teaching hospitals for the extra cost of their patient care.]	13,500,000,000
National Science Foundation, limit growth rate. [NSF needs reauthorization in 1995.]	350,000,000
Arts & humanities, cut funding. [NEA & NEH need reauthorization in 1995.]	531,000,000
Advanced Technology Program, eliminate. [ATP is a "defense conversion" grant program in the National Institute of Standards & Technology.]	820,000,000
High-performance computing, cut funding.	1,230,000,000
Agricultural Research Service & Cooperative State Research Service, cut funding.	364,000,000
Nat'l Oceanic & Atmospheric Admin., cut funding.	805,000,000
National Biological Survey, eliminate.	139,000,000
Student loan interest subsidy, eliminate.	9,600,000,000
<u>Campus-based student aid, consolidate and cut.</u>	<u>2,900,000,000</u>
Total cuts	\$31,839,000,000

*Association of American Universities, National Association of State Universities & Land-Grant Colleges, and American Council on Education; Washington Fax is a commercial news service.

Etten

(Continued From Page 6)

We have to become stronger advocates for ourselves. We may have to sell ourselves differently than in the past. We may also have to seek allies that we have not reached out to in the past, in particular state government and the corporate community.

The days are over when we're just going to continue to receive support without making a case for ourselves. If faculty go to NSF for a day, why not take another half-day to go up to the hill, leave some material, show them the research we're doing, make an argument for the investment?

By Phil Norcross

What Now, Health Care Reform?

Duluth Medical Dean Wonders How to Fund Medical Education

The day after elections, Ronald Franks, dean of the University's Duluth School of Medicine, spoke with Research Review about the future of funding for medical education and research in the next Congress and about training for primary-care physicians. The following is excerpts of that discussion:

Research Review: *What about the election results?*

Franks: The whole mood of Congress may change to less interest in health-care reform, and fundamental issues related to education may not capture the attention of the lawmakers.

If there is reform, it's going to be incremental. That is my read on it. They may focus on expanding coverage to children and certain underserved populations and on issues of insurance reform like improving portability and eliminating loss of coverage due to pre-existing conditions. They will likely avoid issues that are more controversial.

That's my sense of the drama we will see during this coming year. Despite this rather limited agenda, however, a lot of people are still going to be working hard to make sure payments for teaching and research costs don't fall between the cracks.

Research Review: Representatives of the American Association of Medical Colleges have said that academic health care never had a better opportunity than it did last summer, and never will. What can we still hope for from federal health-care reform?

Franks: Over the last couple years, with the tremendous emphasis on cost control, educational moneys have been squeezed way down. They are not very well identified in current expenditures, therefore they are easier to cut.

At the same time educational costs have increased because of moving to ambulatory sites for education. That's where the practice of medicine is more concentrated these days, and well-practiced medicine at ambulatory sites can reduce hospital admissions. Hospitals are rapidly becoming just intensive-care units, with every effort made to provide health care outside the hospital. That requires increasing sophistication in the outpatient setting.

The other major concern for academic health centers is the move to more managed care and the increasingly competitive environment that creates for all teaching institutions. The University of Minnesota Hospital has been quite remarkable in its ability to cut costs and remain on the positive side of the ledger and still provide quality care. But they're under tremendous pressure. They're competing against institutions that do not have education and research

costs. Thus far there's been little relief, federal or state, for the special needs of the academic health center.

Hopefully—though I'm not as optimistic as I was last year—hopefully there will be agreement that we need to put a “placeholder” on the monies that have been and are currently being spent on education so that we retain those funds, and maybe a little bit more to offset the increased costs.

Research Review: You're talking about changes in Medicare reimbursements to academic health centers?

Franks: No. I'm talking more about private insurance companies. Traditionally, there was a lot of cost shifting; insurance would pay for some faculty teaching and resident expenses. Now the managed care folks and the private insurers say that education should be someone else's responsibility, that they can't pay for that and also reduce the costs of providing care for the people they insure.

But we've got to be forward thinking enough to provide for the education of the next generation of health-care professionals. The proposals [in the last Congress] were in the form of “all-payers” assessments [in which a portion of all insurance premiums go to education and research funds]. It will get argued that that's new money, but in fact that's money that has been spent for education up till now. It just has never been earmarked for education. It's gotten carried along with what they paid doctors and hospitals for patient care. A little got skimmed off to pay for education, but there's no skim now.

Research Review: And the same applies to research?

Franks: We have the same concern about clinical research. Over the past 10 or 15 years a reasonable share of those costs have also been covered through “cost-shifting,” so we've been able to use the hospital setting for some new and innovative treatments. More recently insurance companies have reduced their willingness to cover clinical research; now it's almost nonexistent.

Both on state and national levels the effort has been to identify a source of funding to help not only with clinical research, but also biomedical research, and to insure that we retain our international leadership in the development of new techniques and procedures.

Those are the more direct needs of academic health centers that we hope will continue to receive attention this coming year. They were getting increasing support toward the close of the last Congress, but they're relatively small items when compared to the larger issues like universal coverage and insurance reform.

[Next Page]

Again, we need a “placeholder,” so to speak, to secure that money for education and research.

Research Review: Do you foresee more moves to specify the number of primary physicians the country trains?

Franks: My crystal ball says that there will be less effort to do that by regulation.

The marketplace is pushing hard and seems to be having some impact on the choice of residencies by medical students. For the last two years the number of graduating seniors choosing primary-care specialties has increased. Their commitment to family practice, general internal medicine, and pediatrics has risen to about 23 percent, up from 17 or 18 percent just two years ago. Students are well-aware of the recruitment of primary-care physicians by managed-care plans, and of the difficulty of getting jobs in some subspecialties. It has been discussed pretty openly at national meetings that anesthesiologists finishing their residencies in California are not able to find jobs in California, and there are other specialties having trouble.

We may end up going to a more-regulated environment because the marketplace may only correct two thirds of the problem; there may need to be some stronger incentives with some regulations on top of that. But I think the mood in Congress now is to hold off and see if pressures in the marketplace don't correct the problem.

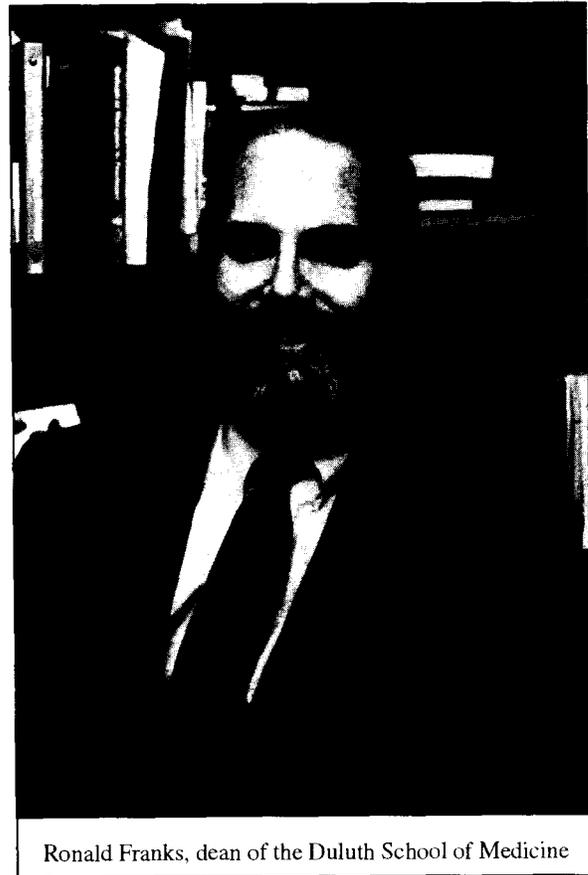
Research Review: Is that good news for Minnesota, which trains a high proportion of primary-care physicians?

Franks: It's good for both medical schools, Duluth and the Twin Cities. For training rural family physicians, the record in Duluth has been very strong for years, and there are very few schools in the country that equal the combined record of Duluth plus the Twin Cities campus in training primary-care physicians. This last graduation, close to 50 percent of the class was committed to primary care.

In Duluth (I'm more familiar with these statistics), for 20 years now our average has been 52 percent of the graduates going into family practice, with another 20 percent beyond that going into other primary-care specialties. A lot of that occurred when primary care was extremely unpopular elsewhere. Perhaps even more amazing is that two-thirds of our students end up in small rural communities, not urban, not suburban, and that's four to five times the national average.

Research Review: And you might expand primary-care training in Duluth?

Franks: We are looking at the feasibility and desirability of expanding the medical program in Duluth to include the third and fourth year. The legislature gave us \$100,000 in planning money this past year to address this question: Are there ways we can improve the training and production of rural physicians for Minnesota?



Ronald Franks, dean of the Duluth School of Medicine

I stress that we are in the early stages of planning and discussion. We have to see if it makes sense, and if so, what's the best structure. We're putting together a tentative curriculum and starting to put together some budgetary figures. We've gathered input from various people in the Twin Cities and throughout the academic health center and throughout the state. We're going to look for critique inside and outside the "U" as we finalize our proposal.

We would see that the majority of the training would take place in small communities in a rural setting. One model would have students getting "continuity experience" by spending one day a week in a rural setting, following the same group of patients, throughout the third and fourth years of training.

The students would also be involved with a public health issue faced in that rural community — like insufficient prenatal care, or excess violence, or environmental toxins. That way the students would get a sense of the broader responsibilities that a rural physician usually has. We hope that there would also be an interdisciplinary experience— medical students would be working with nurse practitioners, pharmacy students, perhaps even dental students—preparing for the team approach to health care which is much more the case in rural communities.

{Next Page}

Franks

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In the fourth year we'd make sure they had some major metropolitan clinical experience, including at least a month in an ER in Minneapolis, so that they get to see the concentration of trauma only seen in a larger urban setting.

We also want to integrate basic sciences in a substantial way, using a problem-based format, to help students understand in a practical way the importance of remaining current in basic science discoveries and bringing them to bear in clinical practice.

That will give students a good broad-based education. They could go into any medical field with that kind of experience, but they would also have special training in the practice of rural medicine.

Research Review: Would you have students for such a program?

Franks: Last year we had 1,600 applicants for 50 spots. And all the students we've talked to, with rare exceptions, have said they'd rather stay here the last two years than transfer to Minneapolis. I don't think we'd have any trouble recruiting students for a larger program.

Funding is Irrational, says Chair of Medical Colleges

"The financing of academic medicine in the United States in the last half-century has never been rational or secure because it has largely been bootlegged from sources not directly related to the academic functions of institutions," said Stuart Bondurant, chair of the Association of American Medical Colleges, during the AAMC's annual meeting in November.

"We should systematically, openly and forcefully seek a dedicated source of funding for medical student education," said Bondurant, "and we must defend all-payer financing of graduate medical education. The source of funding should be linked to health-care expenditures and should be distributed among all payers."

From *Washington Fax*

The major hurdle, of course, is funding such an initiative at a time when finances for medical education are very tight.

Research Review: Back to politics then—What can the University community do to influence or prepare for the coming Congress?

Franks: The faculty can present to the state legislators their support for the University 2000 program and its goal of strengthening the University.

At the federal level, over the next couple of months I think we'll see a re-emergence of the University's Academic Health Center strategy. It's a matter of doing much like Shelley Chou [interim dean, Medical School] and Dick Elzay [dean, School of Dentistry] and I did this past summer—making contact on a personal basis with people in Washington who have a say in the development of health-care policy.

Tom Etten, the University's federal relations officer, got us "whipped into shape." We knew what we were trying to say, but one of the dangers in an academic setting is that you get too convoluted and don't focus on the key issues. Tom helped us present a clear message. Just as important, he put us in touch with the right people. We couldn't have done a third of what we did without his help.

By Phil Norcross

Departmental Keys to Successful Effort Certification

As questions come to ORTTA regarding the University's new quarterly process for effort certification, it has become apparent that formal certification procedures need to be created *at the department level*.

Because of the diversity of University departments, the methods which work well for one department may not be appropriate for another, nor can such procedures be adequately discussed in general training sessions. To reduce the burden of effort certification, it is crucial that department effort coordinators and area managers implement some type of quarterly effort certification process in their area(s).

The responsibility for administering effort certification belongs to the departments. Departments must establish a well-defined process which is understood not only by the department effort coordinator but by all employees who work with grants. These employees include the accountant, the coordinator, the department administrator, the employee certifying effort, and the principal investigator.

A survey of several departments revealed several attributes essential to timely, accurate, and effective effort-certification by departments:

- A realization that effort certification is an integral part of the grants management process.
- Good communication among the principal investigators, the employees performing the work, the individual certifying effort for the employees and the effort/payroll administrator.
- Highly organized administration incorporating intimate knowledge of payroll and grants, preferably administered by departmental accounting. Accounting will generally

(Next Page)

Institutional Review Board: Human Subjects Committee

New, Detailed Review of Studies Begun Before 1989

For every active investigation five years or older that involves human subjects, a detailed report will soon be required from investigators, according to a new policy of the University of Minnesota IRB.

Ongoing, continuing review of research projects approved by the IRB for human subjects testing is required by federal regulation and University policy. That ongoing review includes reports from investigators and IRB renewal at least annually. In 1995, additional detail is required in the annual reports for every active study initially approved before 1989. The new detail is necessary because many regulations and standards have changed in the last five years.

The University of Minnesota IRB adopted this new policy in November 1994, and put it in effect immediately. As research projects come up for their annual reviews, researchers are notified on a project-by-project basis of requirements for more detail.

Researchers will be asked to provide additional information on risks and benefits. Consent documents will be reviewed, and revisions may be required to ensure conformity to current standards.

New report forms are being developed. In the interim, researchers will be asked to complete the existing application for initial approval in order to approximate the necessary information required for updating IRB records.

Researchers are reminded of their responsibility to respond to requests for information from the IRB. They are also reminded of the requirements for accurate and thorough record keeping.

Any questions regarding this new policy and procedure may be directed to Moira Keane at the IRB office, 624-9829, moira@ortta.umn.edu.

Effort

(Continued From Previous Page)

have the broadest understanding of an employee's effort and payroll distribution and how these relate to sponsored projects.

- Good planning by departmental administrators. Administrators should provide and use a continuously updated document detailing planned effort and payroll distribution for each individual who expends effort on a grant. Those departmental documents should be compared to monthly payroll documents and significant disparities investigated. Adjustments can then be reflected on the preprinted quarterly effort reports from ORTTA, which will reduce the time and energy spent confirming effort distribution when the time comes to certify. The monthly and quarterly effort payroll reports can be used to verify effort and payroll and can be integrated into the department's management of the grant.
- Support from every level of authority within the department. The effort coordinator, secretary or accountant cannot successfully orchestrate the effort certification process without management's direct involvement. *It is essential that administrators and/or area managers "blaze the trail" for the effort coordinators, who are in the trenches working to minimize the risk of noncompliance with effort certification requirements.*

As more research dollars flow into the University of Minnesota, the need for accurate and timely effort certification has become increasingly important. The University has provided training and new management reports, distributed policies and procedures defining effort certification, and stated the consequences of failing to comply with effort reporting requirements.

All departments must comply with established effort reporting policies and procedures. Regardless of the method used to facilitate effort certification, departments should ensure that the process incorporates the above-listed attributes. If you have an established process you would like to share with others, or if you would like to discuss your effort certification process with other departments, call the Effort Help Line at 625-7824.

by Doyle Smith

Local IRBs Must Not Let Approvals Lapse, Warns OPRR

Fundamental responsibility for the protection of human research subjects rests with individual Institutional Review Boards (IRBs), says Gary Ellis, director of the NIH Office for Protection from Research Risks (OPRR).

The IRB at the research site is the "cornerstone of the American system of protection of human subjects," he told a December meeting of a group called Public Responsibility in Medicine and Research.

Ellis emphasized that continuing review of ongoing studies is essential. "The absence of substantive IRB review at continuing intervals is one of the most troubling and most frequent problems we see," he said. Federal regulations require that IRBs maintain continuing review "at intervals appropriate to the degree of risk—and, in any event, not less than once per year," he added.

Graduate School News

Grant-in-Aid of Research, Artistry and Scholarship Program

The Graduate School Grant-in-Aid of Research, Artistry and Scholarship Program is a competitive small-grants program available to tenured or tenure-track faculty of the University of Minnesota. Most awards for 1994-95 were made in the spring of 1994 with a July 1 starting date; they are listed below. Additional awards made this fall with a starting date of December 16, 1994, will be reported at a later date.

The deadline for 1995-96 grants is March 6, 1995. Application materials are available from your department office, or by contacting wallin@mailbox.mail.umn.edu, or by calling the Graduate School Faculty Research Office at 625-2356.

Peter Abrams, professor	\$5,600	Colin Campbell, assistant professor	\$15,000
<i>Department of Ecology, Evolution, and Behavior</i>		<i>Department of Pharmacology</i>	
Foraging trait dynamics and food web dynamics		Suppression of human homologous DNA recombination by the yeast RAD52 gene	
Yusuf Abul-Hajj, professor	\$9,874	Chun Chang, assistant professor	\$8,452
<i>College of Pharmacy</i>		<i>Carlson School of Management</i>	
Indirect detection ^1H (^{15}N - ^{31}P decouple) probe for 300 MHz NMR instrument		The privatization problem of the township and village enterprises	
Jane Armstrong, associate professor	\$13,645	William Charlesworth, professor	\$9,300
<i>Department of Small Animal Clinical Sciences</i>		<i>Institute of Child Development</i>	
Molecular identification of a canine granulocytic ehrlichial agent in the Upper Midwest		Resource acquisition in children: individual and cultural differences	
Catherine Asher, assistant professor	\$10,600	W. Andrew Collins, professor	\$16,500
<i>Department of Art History</i>		<i>Institute of Child Development</i>	
Sectarian tensions in South Asian art		Psychosocial development and health in adolescents with diabetes	
Frederick Asher, professor	\$13,285	Rita Copeland, associate professor	\$2,000
<i>Department of Art History</i>		<i>Department of English</i>	
Sculpture of eastern India: the source of its rock		Dissent and the politics of learning in the Later Middle Ages	
David Bernlohr, associate professor	\$10,400	Brian Crooker, associate professor	\$19,600
<i>Department of Biochemistry (CBS)</i>		<i>Department of Animal Science</i>	
Bio-Rad densitometer		Effect of selection for milk yield on physiological function of the dairy cow	
Susan Berry, associate professor	\$25,000	Jane Davidson, associate professor	\$15,050
<i>Department of Pediatrics</i>		<i>Department of Mechanical Engineering</i>	
Isolation of a growth hormone inducible nuclear factor		Modification of gas-phase turbulence by charged particles	
David Biesboer, associate professor	\$14,850	Janet Dubinsky, assistant professor	\$20,000
<i>Department of Plant Biology</i>		<i>Department of Physiology</i>	
The regulation of alkaloid biosynthesis in tobacco by QARPRase		Monoamine oxidase inhibitors and excitotoxicity	
W. Branton, assistant professor	\$20,445	William Durfee, associate professor	\$19,000
<i>Department of Physiology</i>		<i>Department of Mechanical Engineering</i>	
Structural characterization of an excitatory calcium channel blocker		Virtual environments for product prototyping	
Robert Brooker, associate professor	\$12,600	Daryl Dwyer, associate professor	\$17,110
<i>Department of Genetics and Cell Biology</i>		<i>Department of Civil and Mineral Engineering</i>	
Difference infrared studies of the lactose permease		In situ biodegradation of diaryl ethers by <i>Pseudomonas pseudoalcaligenes</i> POB310-II	
Brian Buhr, assistant professor	\$16,100	Susanna Ferlito, assistant professor	\$15,000
<i>Department of Agricultural and Applied Economics</i>		<i>Department of French and Italian</i>	
Development of a Minnesota agricultural sector model for economic impact analysis		Critiques of the Cogito: Alessandro Manzoni and Maine de Biran, between philosophy and literature	
		Craig Forsyth, assistant professor	\$18,000
		<i>Department of Chemistry</i>	
		Structural and synthetic studies of the <i>Spongipyrams</i>	
		Mariam Frenier, professor	\$3,750
		<i>Division of Social Sciences, Morris</i>	
		An approach to the study of the history of women in Vietnam	
		James Fuchs, professor	\$12,600
		<i>Department of Biochemistry (CBS)</i>	
		Regulation of operon encoding ribonucleotide reductase	

Graduate School News

Susan Galatowitsch, assistant professor	\$13,232	Michael Keane, associate professor	\$8,500
<i>Department of Horticultural Science</i>		<i>Carlson School of Management</i>	
Establishment and maintenance of sedge meadow species in restored wetlands		Consumption in Poland during economic transition	
Joan Garfield, associate professor	\$4,060	Timothy Kehoe, professor	\$13,000
<i>General College</i>		<i>Department of Economics</i>	
Pilot study for international validation of the Statistical Reasoning Assessment		A general equilibrium model of environmental policy with altruistic behavior	
Edward Griffin, professor	\$8,294	Paul Kellogg, professor	\$18,000
<i>Department of English</i>		<i>School of Physics and Astronomy</i>	
Loyalist women: the letters of Mary and Catherine Byles		Radio observations of the collision of comet Shoemaker-Levy 9 with Jupiter	
Michael Griffin, assistant professor	\$14,943	Yuichi Kitamura, assistant professor	\$12,600
<i>School of Journalism and Mass Communication</i>		<i>Department of Economics</i>	
Images and information in television news		Statistical properties of specification tests of models with endogenous regressors	
Birgit Grund, assistant professor	\$12,644	Katherine Klink, assistant professor	\$12,650
<i>School of Statistics</i>		<i>Department of Geography</i>	
Smoothing methods for hazard regression with application to HIV data		Validation and testing of a vegetation energy balance model	
Jerome Hajjar, assistant professor	\$12,600	Joseph Konstan, assistant professor	\$23,332
<i>Department of Civil and Mineral Engineering</i>		<i>Department of Computer Science</i>	
Cyclic seismic analysis of concrete-filled steel tube beam-columns		Embeddable applications: a new abstraction for multimedia tool kits	
Craig Henke, assistant professor	\$10,000	Tom Koriath, assistant professor	\$20,000
<i>Department of Medicine</i>		<i>Department of Oral Sciences</i>	
Beckman bioseparation gradient HPLC system		3-D loading of the human mandibular corpus	
Henricus Hogenkamp, professor	\$25,000	Margaret Kuchenreuther, assistant professor	\$9,610
<i>Department of Biochemistry (Medical School)</i>		<i>Division of Science and Mathematics, Morris</i>	
Ribonucleotide reductase system, active site analysis		Effects of burn regime on the population dynamics of three prairie species	
Jon Holy, assistant professor	\$19,360	Leonard Kuhi, professor	\$15,450
<i>Duluth School of Medicine</i>		<i>Department of Astronomy</i>	
The role of lamin expression during cell differentiation		Reduction and analysis of spectra of T Tauri stars	
Ralph Holzenthal, associate professor	\$6,540	Vipin Kumar, associate professor	\$9,390
<i>Department of Entomology</i>		<i>Department of Computer Science</i>	
Preliminary exploration of the Caddis fly fauna of Venezuela		Scalable parallel algorithms	
Alan Hooper, professor	\$12,269	Abbas Kurawarwala, assistant professor	\$17,540
<i>Department of Genetics and Cell Biology</i>		<i>Carlson School of Management</i>	
Identification of conserved sequences in enzymes of ammonia oxidation		Diffusion of multiple generation of technologies and its implications for the management of production and logistics	
Nancy Houfek, assistant professor	\$6,250	Paul Letourneau, professor	\$14,684
<i>Department of Theatre Arts and Dance</i>		<i>Department of Cell Biology and Neuroanatomy</i>	
Letters from Manila		Regulation of neuronal integrins by inhibitory ECM molecules	
Peter Hudleston, professor	\$16,100	Theodore Lewis, assistant professor	\$17,600
<i>Department of Geology and Geophysics</i>		<i>Department of Vocational and Technical Education</i>	
Ductile and brittle behavior of upper crustal rocks		A case study of the impact of technology on work	
Lisa Hunter, assistant professor	\$13,729	Alex Lubet, associate professor	\$14,400
<i>Department of Otolaryngology</i>		<i>School of Music</i>	
Binaural processing in normal children and adults		Bosnia Blues	
William Hutchison, assistant professor	\$15,500	Barbara Martinson, assistant professor	\$13,938
<i>Department of Entomology</i>		<i>Department of Design, Housing, and Apparel</i>	
Sugarbeet resistance to Minnesota populations of sugarbeet root aphid		Departure from Eurocentrism: bringing cultural diversity to models of graphic design	
Deborah Kallick, assistant professor	\$17,600		
<i>College of Pharmacy</i>			
Solution structure of DNA-drug complexes			

Graduate School News

Georgiana May, assistant professor <i>Department of Plant Biology</i> Gel imaging system	\$10,174	Thomas Peacock, associate professor <i>Department of Education, Duluth</i> A social, educational, cultural and economic impact analysis of gaming on Leech Lake Reservation in Minnesota	\$15,400
Kenneth McDonald, assistant professor <i>Department of Medicine</i> Induction of beta-actin mRNA expression in remodeling canine myocardium	\$20,000	Jennifer Pierce, assistant professor <i>Department of Sociology</i> Creating identity on the margins: outsiders in the land of Zion	\$13,827
D. Frank McKinney, professor <i>Department of Ecology, Evolution, and Behavior</i> Social organization of the Laysan duck	\$5,000	Andrzej Piotrowski, assistant professor <i>Department of Architecture</i> Computer imaging: new modes of depicting architecture	\$9,090
Kathryn McLane, assistant professor <i>Department of Chemistry, Duluth</i> Combinatorial antibody libraries from human myasthenic thymic B lymphocytes	\$21,150	Janice Post-White, assistant professor <i>School of Nursing</i> Comparison of techniques for measuring natural killer cell cytotoxicity	\$22,695
Kathryn McLane, assistant professor <i>Department of Chemistry, Duluth</i> Thermalcycler and high-speed centrifuge	\$22,988	Riv-Ellen Prell, associate professor <i>Program in American Studies</i> Fighting to become Americans: Jewish women and men in conflict in the twentieth century	\$15,098
Jane McLeod, assistant professor <i>Department of Sociology</i> Determinants of children's responses to poverty	\$6,300	Anne Pusey, associate professor <i>Department of Ecology, Evolution, and Behavior</i> Food distribution and primate social organization	\$18,350
Toni McNaron, professor <i>Department of English</i> Book entitled <i>Not So Gay Studies: A Lesbian Looks at Academe, 1964-1994</i>	\$9,525	Paula Rabinowitz, associate professor <i>Department of English</i> National lives/national lands: sketching gender in the Americas	\$13,350
Russell Menard, professor <i>Department of History</i> The development of early American land markets	\$12,600	Peter Reich, professor <i>Department of Forest Resources</i> A landscape approach to biodiversity and structure of Minnesota forests	\$12,600
Karen Mesce, assistant professor <i>Department of Entomology</i> The role of neurotransmitters in the development of adult behaviors	\$22,000	Nancy Reinsmoen, assistant professor <i>Department of Surgery</i> Correlation of allogeneic microchimerism with donor antigen responses	\$14,440
Fernando Meza, assistant professor <i>School of Music</i> Study of MIDI (Musical Instrument Digital Interface) applied to percussion instruments	\$19,276	Daniel Romero, assistant professor <i>Department of Pharmacology</i> Characterization of telomerase from <i>Paramecium tetraurelia</i>	\$20,100
Valerie Miner, associate professor <i>Department of English</i> <i>A Range of Light</i> , a novel	\$7,000	Ann Rougvié, assistant professor <i>Department of Genetics and Cell Biology</i> A Zeiss Axiophot for the study of <i>C. elegans</i> development	\$28,000
Penelope Morton, associate professor <i>Department of Geology, Duluth</i> Acquisition of an x-ray diffractometer	\$20,000	Rongsheng Ruan, assistant professor <i>Department of Agricultural Engineering</i> Study of structure-function relationships in microfibrillated cellulose	\$16,600
Charles Nelson, associate professor <i>Institute of Child Development</i> Neural mechanisms of early memory development	\$16,600	Steven Ruggles, associate professor <i>Department of History</i> Public use microdata sample of the 1870 census: pilot study	\$25,200
Susan Noakes, professor <i>Department of French and Italian</i> Aspects of recent scholarship on late medieval Florentine economic history: a context for Boccaccio's <i>Decameron</i>	\$11,630	Paul Sammak, assistant professor <i>Department of Pharmacology</i> Inhibitory signaling during wound healing via cAMP	\$13,200
Matthew O'Keefe, assistant professor <i>Department of Electrical Engineering</i> Translation software for parallel computing	\$12,600	Ruth Shaw, assistant professor <i>Department of Ecology, Evolution, and Behavior</i> Genetics and evolution of environmental response in a prairie community	\$12,600
Nikolaos Papanikolopoulos, assistant professor <i>Department of Computer Science</i> Off-line recognition of signatures using revolving active deformable models	\$16,800		

Graduate School News

Marcia Shew, assistant professor	\$11,253	Rajiv Vaidyanathan, assistant professor	\$12,125
<i>Department of Pediatrics</i>		<i>Department of Management Studies, Duluth</i>	
The relationship of cervical hormonal receptors to human papillomavirus-associated cervical lesions		The influence of consumer inference making on the effectiveness of external reference prices in advertisements	
Kingshuk Sinha, assistant professor	\$13,960	Stephanie Valberg, assistant professor	\$16,853
<i>Carlson School of Management</i>		<i>Department of Clinical and Population Sciences</i>	
Studies on control and evaluation of manufacturing plants		Epidemiological, genetic and molecular basis of rhabdomyolysis in racehorses	
Mark Snyder, assistant professor	\$20,000	Richard Vehe, assistant professor	\$20,000
<i>Department of Civil and Mineral Engineering</i>		<i>Department of Pediatrics</i>	
Hydraulic power distribution system: capacity and safety improvements		HLA-DRB gene expression: mechanisms for allelic variation in transcription	
Mark Snyder, professor	\$22,412	Kendall Wallace, associate professor	\$9,865
<i>Department of Psychology</i>		<i>Duluth School of Medicine</i>	
Social and psychological aspects of AIDS volunteerism		Mitochondrial-mediated quinone cytotoxicity	
Marla Spivak, assistant professor	\$14,350	John Weeks, associate librarian	\$9,055
<i>Department of Entomology</i>		<i>Wilson Library</i>	
Hygienic behavior and detection of <i>Varroa</i> mites by honey bees		Excavation of a protohistoric Taino Indian settlement: Chacuey, Dajabon, Dominican Republic	
James Stout, professor	\$7,725	Li-Na Wei, assistant professor	\$10,000
<i>Department of Geology and Geophysics</i>		<i>Department of Pharmacology</i>	
The tectonic evolution of continents		Cryostat	
Roger Stuewer, professor	\$2,743	Walter Weyhmann, professor	\$20,600
<i>School of Physics and Astronomy</i>		<i>School of Physics and Astronomy</i>	
History of nuclear physics		Electrical resistance measurements below 1mK of thallium and PrNi ₅	
Li Sun, assistant professor	\$14,400	Srilata Zaheer, assistant professor	\$16,650
<i>Department of Chemistry</i>		<i>Carlson School of Management</i>	
Characterization of molecular interactions in aqueous solutions by surface-enhanced Raman spectroscopy		Technology adoption and performance in global currency trading	
Robert Sykes, associate professor	\$6,700	Viktor Zhdankin, assistant professor	\$20,720
<i>Department of Landscape Architecture</i>		<i>Department of Chemistry, Duluth</i>	
Design inquiry into the poetics of stormwater management		Perfluoroalkyl idonium compounds: new, promising reagents for organic chemistry	
Gary Thomas, associate professor	\$9,136	Wei Zheng, assistant professor	\$11,715
<i>Department of Cultural Studies and Comparative Literature</i>		<i>School of Public Health</i>	
Illicit Arcadias: homoeroticism and Italianate subculture in early modern Britain		A pilot study for genetic factors in sequential adenoma formation	
LaDora Thompson, assistant professor	\$13,772		
<i>Department of Physical Medicine and Rehabilitation</i>			
Aged skeletal muscle: single fiber function following hind limb unweighting			
Graham Tobin, professor	\$22,560		
<i>Department of Geography, Duluth</i>			
Modeling long-term stress in flood hazard environments			
George Trachte, associate professor	\$16,600		
<i>Duluth School of Medicine</i>			
Natriuretic peptide effects on neuronal calcium channels			
Caroline Turner, assistant professor	\$6,300		
<i>Department of Educational Policy and Administration</i>			
The tenure track: minority faculty in academe			
Tracy Turner, associate professor	\$16,516		
<i>Department of Clinical and Population Sciences</i>			
In vitro and in vivo analysis of physical forces on the equine navicular bone: pilot studies			

■ Department of State

Tropical Ecosystems Small Grant Program

The Tropical Ecosystems Directorate (TED) of the U.S. Man and Biosphere Program (U.S. MAB) has called for research and activity proposals addressing the theme of sustainable use of tropical forest resources. Preference will be given to proposals which focus on the trinational region of Belize, Guatemala and/or Mexico.

The U.S. MAB/TED small grant program is intended to directly foster cross-border cooperation, research and exchange of information to promote the sustainable management of tropical forests in the trinational region. The highest priority is placed on activities that are bi- or trinational in nature. In addition, U.S. MAB/TED funding can assist research teams and/or activity projects to 1) add a national researcher to their effort, 2) better integrate conservation and sustainable development, 3) add a particular discipline to an ongoing research project, 4) explore the application of ongoing site-specific research to an additional site in the Maya trinational region, or 5) carry out activities complementary to the TED project in the region. Planning proposals are not fundable.

Within the broad thematic focus of sustainable use of tropical forest resources, research projects and activities are encouraged that address focal issues such as community-based production systems, tropical forest management for timber and/or nontimber products, economic valuation and accounting of tropical forest products and services, benefits and costs of low-impact uses such as ecotourism, or integration of biodiversity conservation with production forestry.

A total of \$60,000 is available to support a small number of research and activity grants in the range of \$10,000 to \$20,000.

A one- to two-page project prospectus is required by **January 31, 1995**. This prospectus should provide a brief description of the proposed project and explain how the project meets U.S. MAB/TED selection criteria. The prospectus should include a simple four-item budget (salaries, equipment/materials, travel, other costs). Full proposals will be invited.

The application deadline for full proposals is **June 16, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. Roger Soles, U.S. MAB Secretariat, OES/EGC/MAB, Department of State, Washington, DC 20522; 703/235-2946; fax 703/235-3002.

■ National Aeronautics and Space Administration

Microgravity Fluid Physics

The National Aeronautics and Space Administration (NASA) has supported research in microgravity fluid physics for over three decades. The program encompasses a wide range of research in physics and engineering science, including studies of heat and mass transfer processes, fluid dynamics and the physics of complex fluids.

An extensive research program supports theoretical and experimental investigations in ground-based laboratories. Also, many investigations are conducted using fluid dynamics research apparatus built to take advantage of the limited low-gravity test times available in facilities such as the drop-towers at the NASA Lewis Research Center. These ground-based experiments, along with theoretical modeling, form the basis for most of the current understanding of the effects of gravity on fluid processes and phenomena.

With this specific research announcement, NASA is soliciting proposals to conduct research emphasizing experimental efforts that are sufficiently mature to justify near-term flight development.

Further programmatic objectives of this announcement include objectives broadly emphasized by the civil space program, including the advancement of economically significant technologies, technology infusement into the private sector, and enhancement of the diversity of participation in the space program.

Approximately 80 ground-based study proposals will be funded, at an average of \$100,000 per year, for up to four years. Eight flight experiment definition proposals will be funded on an average of \$175,000 per year.

A brief letter of intent is required by **January 30, 1995**. The full proposal is due **March 6, 1995**. Preparation guidelines may be found in the announcement. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. Bhim Singh, MS 500-102, Space Experiments Division, Lewis Research Center, NASA, 21000 Brookpark Road, Cleveland, OH 44135-3191.

■ National Institute of Standards and Technology

Materials Science and Engineering

The Materials Science and Engineering Laboratory, National Institute of Standards and Technology (NIST) is continuing its program for grants and cooperative agreements in the following fields of research: ceramics, metallurgy, polymer sciences, neutron scattering research and spectroscopy.

Approximately \$500,000 will be available to support grants and cooperative agreements under this program. The program is limited to innovative ideas generated by the proposal writer on what research will be performed and how. Grants will generally provide financial assistance without substantial NIST involvement in the project; cooperative agreements will generally involve a close working relationship between a group of NIST experts and the recipient. Grants will be awarded for a one-year period.

All proposals submitted must be in accordance with the program objectives listed below:

- I. Office of Intelligent Processing of Material, 851
George Birnbaum 301/975-5727
To measure the far infrared (FIR) and mid-infrared continuum absorption of primary nonpolar gases and liquids found in the atmospheres of the outer planets, in particular gaseous and liquid CH₄ and gaseous mixtures of N₂ and CH₄, and to analyze these data.
- II. Ceramics Division, 852
Ronald Munro 301/975-6127
To supplement division activities in the area of ceramic processing, tribology, composites, machining, interfacial chemistry and microstructural analysis.
- III. Polymers Division, 854
Bruno Fanconi, 301/975-6762
To support programs in polymer blends, composites, electrical applications and dental polymeric materials through participation in research on synthesis, processing and characterization of structure, and mechanical and electrical properties.
- IV. Metallurgy Division, 855
John Manning, 301/975-6157
To develop techniques to predict, measure and control transformations, phases, microstructure and kinetic processes in metals and their alloys.

- V. Metallurgy Division, 855
Neville Pugh, 301/975-5960

To develop new and improved sensors, measurement techniques and analytical models for metallurgical processes in order to facilitate the development and adoption of intelligent processing systems for materials.

- VI. Reactor Radiation Division, 856
John Rush, 301/976-6220

To develop cold and thermal neutron research approaches and related physics, chemistry and materials applications.

Proposals will be accepted continuously through **September 30, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the individuals listed above.

■ U.S. Department of Agriculture Rangeland Research

The United States Department of Agriculture will award standard grants for basic studies in rangeland research.

Proposals will be considered in the following specific areas: 1) Management of rangelands and agricultural land as integrated systems for more efficient utilization of crops and waste products in the production of food and fiber; 2) methods of managing rangeland watersheds to maximize efficient use of water and improve water yield, water quality and water conservation, to protect against onsite and offsite damage to rangeland resources from floods, erosion and other detrimental influences, and to remedy unsatisfactory and unstable rangeland conditions; and 3) revegetation and rehabilitation of rangelands including the control of undesirable species of plants.

No more than \$80,000 will be awarded for the support of any one project regardless of the amount requested. The total amount of funds available is \$451,535. Matching is required on a 50/50 basis.

The application deadline is **February 28, 1995**. For further information contact Dr. Wayne K. Murphey, CSREES-USDA, 202/401-4089.

{Next Column}

■ Department of Energy Co-Contaminant Chemistry

The U.S. Department of Energy (DOE), Office of Energy Research, has long been a supporter of basic research on contaminant geobiochemistry in surface waters, soils, subsurface systems and the marine environment. This research has led to fundamental advances in understanding how radionuclides, metals and organic substances behave in natural systems, and in recognizing the important chemical, hydrologic and biologic factors that control their mobilization and their transport.

In 1989, DOE accelerated research on the subsurface geochemical behavior of complex chemical contaminant mixtures. The accelerated research was motivated in part by DOE's need to remediate subsurface contamination at its many production facilities where nuclear processing, weapons development/testing and waste disposal have occurred for more than 40 years. Countless waste sites exist at these facilities and reports of subsurface contamination by mixtures of metals, radionuclides and organic ligands have been frequent.

The Co-Contaminant Chemistry program is committed to the development of basic scientific information on the subsurface behavior or organic-radionuclide mixtures that can assist in the development of improved models for transport predictions, new technologies for safe remediation of land, and protection of valuable groundwater resources nationwide.

DOE has issued a document formalizing its plans for research on co-contaminant mixtures for the next five years. The document is intended to inform those who may be interested in the content of the research and DOE's future plans and to provide guidance to new investigators on research priorities. No specific program announcements or deadlines were announced; this is a planning document only. Copies are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ Department of Energy Energy Biosciences

The Office of Basic Energy Sciences, Office of Energy Research, U.S. Department of Energy (DOE) announces its interest in receiving preapplications for research funding in the Energy Biosciences program area.

The Energy Biosciences program has the mission of generating fundamental biological information about plants and

(Next Column)

nonmedical related microorganisms that can provide support for future energy related biotechnologies. The objective is to pursue basic biochemical, genetic and physiological investigations that may contribute towards proving alternate fuels, petroleum replacement products, or energy conservation measures, as well as other technologies, such as phytoremediation, related to DOE programs.

Areas of interest include bioenergetic systems, including photosynthesis; control of plant growth and development, including metabolic, genetic and hormonal and ambient factor regulation, metabolic diversity, ion uptake, transport and accumulation, stress physiology and adaptation; genetic transmission and expression; plant-microbial interactions; plant cell wall structure and function; lignocellulose degradative mechanisms; mechanisms of fermentations; genetics of neglected microorganisms, energetics and membrane phenomena; thermophily (molecular basis of high-temperature tolerance); microbial interactions; and one-carbon metabolism, which is the basis of biotransformations such as methanogenesis. The objective is to discern and understand basic mechanisms and principles.

A preapplication is due **February 22, 1995**. The preapplication should consist of a two- to three-page concept paper about the research being contemplated and should focus on the objectives of the planned research, its scientific goals and their significance, an outline of the approaches planned, and any other information relating to the planned research. No budget information or biographical data need be included, nor is an institutional endorsement necessary. Formal proposals will be invited.

Preapplications referencing Program Notice 95-07 should be sent to U.S. Department of Energy, Office of Basic Energy Sciences, ER-17, Division of Energy Biosciences, Washington, D.C. 20585.

■ National Pork Producers Council Fellowships

The National Pork Industry Foundation, through the National Pork Producers Council, is offering a \$5,000 fellowship in 1995. This fellowship is available to graduate students researching *pork as a food*. Both masters and Ph.D. degree candidates are eligible.

The application deadline is **January 19, 1995**. Contact Pat Rigby or Rodney Goodwin, National Pork Producers Council, PO Box 10306, Des Moines, IA 50306; 515/223-2608, fax 515/223-2646.

■ Whitaker Foundation Biomedical Engineering

The Whitaker Foundation is a private, nonprofit foundation that encourages and supports research and training in biomedical engineering. This is a relatively new field that combines the techniques of engineering and medicine to prevent, diagnose and treat disease. Since the foundation was created in 1975, it has awarded more than \$120 million in grants to colleges, universities and their affiliated institutions to support faculty research, graduate fellowships and program development.

The Whitaker Foundation provides awards through the following programs.

- Biomedical Engineering Research Grants
- Biomedical Engineering Development Awards
- Graduate Fellowships in Biomedical Engineering
- Special Opportunity Awards in Biomedical Engineering
- Cost-Reducing Health Care Technologies (with NSF)
- Bioengineering for Disease Prevention and Control (with NIH)

Preliminary applications will be received four times in 1995: **January 3, April 4, August 1 and December 1**, with full proposals due **February 15, June 1, October 3 and February 1, 1996**, respectively. For further information contact the Program Director, Whitaker Foundation, 901 15th St NW, Suite 1000, Washington, DC 20005; 202/408-1505. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ National Center for Research Resources Biomedical Research Support Shared Instrument Grant

The National Center for Research Resources, a component of the National Institutes of Health, is continuing its competitive Biomedical Research Support (BRS) Shared Instrumentation Grant Program. The objective of the program is to make available to institutions with a high concentration of NIH-supported biomedical/behavioral investigators, research instruments which can only be justified on a shared-use basis and for which meritorious research projects are described. Awards will be made for the direct costs of the acquisition of new, or the updating of existing, research instruments.

[Next Column]

An eligible institution may submit more than one application for different instrumentation; however, if several applications are submitted for similar instrumentation from one or more entities on the same campus, documentation from a high administrative official must be provided, stating that the several applications are part of a campus-wide institutional plan, not an unintended duplication. [Note from the VP Research/Graduate School Dean: To ensure there is no overlap of applications submitted from the University, please contact the office of the VP for Research/Graduate School Dean by **January 16, 1995**, if planning to submit a proposal to this program].

Applications are limited to instruments that cost at least \$100,000 per instrument or system. The maximum direct cost award is \$400,000; no indirect costs will be provided. Cost sharing is not required.

This announcement was prepared from last year's guidelines in order to ensure institutional coordination of submissions. The anticipated deadline for 1995 is late March.

■ National Center for Research Resources Research Facilities Construction Projects

RFA: RR-95-003

The National Center for Research Resources, National Institutes of Health, has been authorized to make grants to public and nonprofit private entities to expand, remodel, renovate or alter existing research facilities or construct new research facilities for biomedical and behavioral research and research training.

Facility construction that may be supported under this program includes construction of new facilities, additions to existing buildings, completion of uninhabitable "shell" space in new or existing buildings, and major alterations and renovations. Land acquisition, off-site improvements and instrumentation are *not* eligible for support.

Up to \$20 million will be available for this initiative. It is anticipated that 10 to 20 new awards will be made.

An optional, nonbinding letter of intent is requested by **January 20, 1995**. The application receipt date is **March 9, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. Charles L. Coulter, Director, Research Facilities Improvement Program, National Center for Research Resources, 5333 Westbard Avenue, Room 8A15, Bethesda, MD 20892; 301/594-7952, e-mail charlesc@ep.ncrr.nih.gov.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary		
	Number	Amount
Proposals Submitted		
November 1994	345	\$ 47,421,276
Awards Processed		
November 1994	808	95,537,851*
Proposals Submitted		
July 1994 - November 1994	1,629	274,828,571
Awards Processed		
July 1994 - November 1994	2,101	229,798,173
Proposals Submitted		
July 1993 - November 1993	1,592	232,358,544
Awards Processed		
July 1993 - November 1993	1,240	112,422,961

* An unusually large number and amount of awards were recorded in November 1994 because ORTTA Grants and Contracts staff processed a large backlog. Projects sponsored by these awards began as scheduled; the delay in recording the awards resulted from unusually heavy audit and other responsibilities that temporarily affected the workloads of ORTTA staff members.

- Dietary Risk Factors for Canine Dilated Cardiomyopathy**
 Carl A. Osborne, Small Animal Clinical Sciences
 Mary Ella M. Pierpont, Pediatrics
 Phillip Ogburn, Small Animal Clinical Sciences
 Mark Morris Associates
 \$124,729 - 07/01/94-06/30/97
- Cellular and Molecular Mechanisms of Mortality in Gram-Negative Sepsis**
 Douglas Weiss, Veterinary Pathobiology
 Michael P. Murtaugh, Veterinary Pathobiology
 U.S. Department of Agriculture
 \$150,000 - 09/01/94-08/31/96
- Intelligent Vehicle/Highway Systems Concepts**
 Dennis Foderberg, Center for Transportation Studies
 U.S. Department of Transportation
 \$135,686 - 10/01/94-09/30/95
- Rural/Urban Hospital Length of Stay**
 Robert L. Kane, Institute for Health Services Research
 Sandra J. Pothoff, Health Management and Policy
 Michael D. Finch, Institute for Health Services Research
 Agency for Health Care Policy and Research
 \$148,000 - 09/30/94-09/29/95
- Analysis of Technical Assistance Needs of AHCP Rural Management**
 Ira S. Moscovice, Institute for Health Services Research
 Agency for Health Care Policy and Research
 \$249,992 - 09/30/94-03/30/96
- Analysis of Primary Care Workforce Options in Rural Areas**
 Ira S. Moscovice, Institute for Health Services Research
 Agency for Health Care Policy and Research
 \$245,520 - 09/30/94-03/30/96
- Multi-State Analysis of Enrollment, Utilization and Expenditures for Persons with AIDS**
 Jon Christianson, Institute for Health Services Research
 Health Care Financing Administration
 \$297,411 - 09/16/94-09/15/95
- Minnesota Area Geriatric Education Center**
 Robert L. Kane, Institute for Health Services Research
 Department of Health and Human Services
 \$270,000 - 09/01/94-08/30/95

- Maternal and Child Health Leadership Skills Training Institute**
 Gregory Alexander, Health Management and Policy
 Health Resources and Services Administration (HRSA)
 \$274,232 - 10/01/94-09/30/95
- Maternal and Child Health Training Program**
 Robert W. ten Bensel, Health Management and Policy
 Health Resources and Services Administration (HRSA)
 \$346,970 - 07/01/94-06/30/95
- Tuberculin Skin Test Results in U.S. Job Corps Students**
 Alan R. Lifson, Epidemiology
 Association of Schools of Public Health
 \$332,496 - 10/01/94-09/27/95
- Cardiovascular Consequences of Sleep Apnea**
 Eyal Shahar, Epidemiology
 NIH, NHLBI
 \$282,438 - 09/30/94-08/31/95
- A Nutrition Data System**
 I. M. Buzzard, Epidemiology
 NIH, NHLBI
 \$297,015 - 09/13/94-11/30/98
- Community Surveillance of Cardiovascular Disease**
 Russell V. Luepker, Epidemiology
 NIH, NHLBI
 \$621,275 - 07/01/94-06/30/95
- Genetic Epidemiologic Studies of Colon Polyps and Cancer**
 John D. Potter, Epidemiology
 NIH, NCI
 \$569,089 - 09/01/94-10/31/94
- Coronary Artery Risk Development in Young Adults**
 Aaron Folsom, Epidemiology
 NIH, NHLBI
 \$376,643 - 12/01/94-05/31/95
- Studies of Aerosol Sampler Performance Characteristics**
 James H. Vincent, Environmental and Occupational Health
 Department of Health and Human Services
 \$119,271 - 09/01/94-08/31/95
- Enoxaparin vs. Heparin for the Treatment of Deep Venous Thrombosis (DVT)**
 M. B. O'Connell, Pharmacy Practice
 Rhone-Poulenc Rorer Pharmacy, Inc.
 \$101,988 - 07/01/94-09/30/95
- Double-Blind Study of Neoral and Sandimmune in Primary Cadaveric Renal Transplant Patients**
 Daniel M. Canafax, Pharmacy Practice
 Arthur Matas, Surgery
 Sandoz, Inc.
 \$149,628 - 07/01/94-12/31/95
- Concentration Controlled Antiretroviral Therapy**
 Courtney Fletcher, Pharmacy Practice
 NIH, NIAID
 \$173,508 - 09/01/94-08/31/95
- Advanced Interdisciplinary Preparation of Clinical Nurse Specialists for Children**
 Barbara J. Leonard, School of Nursing
 Patricia S. Tomlinson, School of Nursing
 Jennifer York, Educational Psychology
 U.S. Department of Education
 \$116,920 - 09/01/94-08/31/95
- Family Nutrition Program**
 Marilyn A. Johnson, Human Ecology (MES)
 St of MN, Department of Human Services
 \$2,259,886 - 10/01/94-09/30/95

Improved Bioartificial Liver Function in Hepatic Failure

Frank B. Cerra, Surgery
 Rory P. Remmel, Medicinal Chemistry
 Henry J. Mann, Pharmacy Practice

NIH, NIDDK
 \$137,348 - 09/30/94-09/29/95

Effect of Oral Rapamycin on Acute Rejection in Renal Allograft Recipients

Daniel M. Canafax, Pharmacy Practice
 Arthur Matas, Surgery

Wyeth-Ayerst Research
 \$278,134 - 08/01/94-10/31/95

Studies in Large Animal Xenotransplantation

R. M. Bolman, Surgery
 Agustín P. Dalmaso, Laboratory Medicine and Pathology
 Baxter Healthcare Corporation
 \$140,400 - 11/01/94-10/31/95

Smoking Cessation Among Recovering Alcoholics

Dorothy Hatsukami, Psychiatry

NIH, NIAAA
 \$172,970 - 09/01/94-08/31/95

National Center for Youth With Disabilities

Robert W. Blum, School of Public Health
 Health Resources and Services Administration (HRSA)
 \$154,903 - 10/01/94-09/30/95

Rehabilitation Research and Training Centers

Robert W. Blum, School of Public Health
 Joan M. Patterson, Health Management and Policy
 U.S. Department of Education
 \$600,000 - 09/15/94-09/14/95

Scarce Medical Services Contract - Orthopaedic Surgery

Roby C. Thompson, Jr., Orthopaedic Surgery
 Edward C. McElfresh, Orthopaedic Surgery
 Veterans Administration
 \$341,074 - 11/01/94-10/31/95

Enoxaparin vs. Unfractionated Heparin for Prevention of Deep Venous Thrombosis (DVT)

Jeffrey M. Fowler, Obstetrics and Gynecology
 M. D. Chen, Obstetrics and Gynecology
 Rhone-Poulenc Rorer Pharmacy, Inc.
 \$150,000 - 08/08/94-03/30/95

Conventional vs. Percutaneous Discectomy: a Clinical Trial

Stephen J. Haines, Neurosurgery
 James R. Boen, Public Health
 Richard Latchaw, Neurosurgery
 NIH, NINDS
 \$630,696 - 09/20/94-08/31/95

Visualization of Functional Connectivity in the Brain

David Rottenberg, Neurology
 Stephen C. Strother, Radiology
 NIH, NIDA
 \$148,414 - 09/30/94-08/31/95

Pancreas and Islet Transplantation in Humans

R. Paul Robertson, Medicine
 NIH, NLM
 \$158,014 - 08/01/94-07/31/95

Negative Regulatory Effects of Stroma-Progenitor Contact

Catherine M. Verfaillie, Medicine
 NIH, NHLBI
 \$198,066 - 08/01/94-07/31/95

Erythrocyte Membrane Abnormalities in Sickle Disease

Robert P. Hebbel, Medicine
 NIH, NHLBI
 \$247,395 - 08/01/94-07/30/95

Outstanding Investigator Grant

John Kersey, Cancer Center
 National Cancer Center
 \$430,982 - 08/29/94-04/30/95

Transfusion Trial to Prevent Platelet Alloimmunization

J. Jeffrey McCullough, Laboratory Medicine and Pathology
 Helen Enright, Medicine
 Dorothy Uhlman, Medicine
 NIH, NHLBI
 \$348,902 - 08/01/94-07/31/95

Breast Cancer Resistance to Cyclophosphamide and Other Oxazaphosphorines

Norman E. Sladek, Pharmacology
 USDOD, Army
 \$748,163 - 10/01/94-09/30/98

Acquisition of a Dilution Refrigerator and Superconducting Magnet System

Allen M. Goldman, Physics and Astronomy
 National Science Foundation
 \$127,250 - 08/01/94-07/31/95

Coal Dust Mine Instrumentation and Characterization

Virgil A. Marple, Mechanical Engineering
 Kenneth L. Rubow, Mechanical Engineering
 Pennsylvania State University
 \$120,000 - 07/01/94-09/30/95

Project: Open Access

Thomas R. Berger, School of Mathematics
 National Science Foundation
 \$767,024 - 08/01/94-07/31/97

Engineering Research Center for Interfacial Engineering

D. Fennell Evans, Chemical Engineering and Materials Science
 National Science Foundation
 \$1,097,822 - 10/01/94-09/30/95

Technician Support: Minnesota Isotope Laboratory

Lawrence Edwards, Geology and Geophysics
 Emi Ito, Geology and Geophysics
 National Science Foundation
 \$120,000 - 09/15/94-08/31/97

Requirement Acquisition and Safety Analysis in an Industrial Software Development

Wei-Tek Tsai, Computer Science
 Cardiac Pacemakers, Inc.
 \$106,000 - 07/01/94-06/30/95

Improving the Performance of Scalable Shared-Memory Multiprocessors

Pen-Chung Yew, Computer Science
 National Science Foundation
 \$261,700 - 09/01/94-02/29/96

Numerical Methods for Very Large Sparse Dynamical Systems

Daniel L. Boley, Computer Science
 Gary J. Balas, Aerospace Engineering and Mechanics
 Youcef Saad, Computer Science
 National Science Foundation
 \$180,000 - 09/15/94-08/31/97

Information Processing for Arabidopsis cDNA Sequencing

John Riedl, Computer Science
 Ernest Retzel, Microbiology
 John V. Carlis, Computer Science
 National Science Foundation
 \$299,833 - 08/01/94-07/31/95

Development of Accelerated Load Test Platform for Pavements

Mark Snyder, Psychology
 St of MN, Department of Transportation
 \$134,985 - 09/02/94-09/30/95

Metal Cluster Active Sites in Proteins

Lawrence Que, Jr., Chemistry
 National Science Foundation
 \$100,000 - 09/01/94-08/31/95

Surface Stability and Overlayer Growth on High Temperature Superconductors

John Weaver, Chemical Engineering and Materials Science
USDOD, Navy
\$108,000 - 10/01/94-09/03/95

Characterization of Cell Behavior in Biological Matrices

Matthew V. Tirrell, Chemical Engineering and Materials Science
Leo T. Furcht, Laboratory Medicine and Pathology
National Science Foundation
\$300,000 - 09/15/94-08/31/95

Kinetic Studies and Modelling of Interactions of Nutrient, Hormone, Growth Rate and Form Change in Carrot Embryo Development

Wei-shou Hu, Chemical Engineering and Materials Science
Jeffrey J. Derby, Chemical Engineering and Materials Science
Emil J. Staba, Medicinal Chemistry
National Science Foundation
\$157,884 - 08/15/94-07/31/95

Substance Abuse and Prevention

Amos S. Deinard, Community-University Health Care Center
St of MN, Department of Human Services
\$222,500 - 07/01/94-06/30/95

Victim Services

Amos S. Deinard, Community-University Health Care Center
St of MN, Department of Corrections
\$151,758 - 07/01/94-06/30/95

Management Training and Economics Education Project

Zbigniew Bochniarz, Humphrey Institute
Randal Zimmerman, Humphrey Institute
G. Edward Schuh, Humphrey Institute
USDS, Agency for International Development
\$339,750 - 09/30/94-09/30/98

Low-Input Agriculture, Minnesota

Pierre Robert, Soil Science
David R. Huggins, SW Agricultural Experiment Station, Lamberton
U.S. Department of Agriculture
\$101,862 - 09/01/94-08/31/96

Modulation of Reproductive Efficiency by Prolactin in the Domestic Turkey

Mohamed E. El Halawani, Animal Science
U.S. Department of Agriculture
\$225,000 - 09/01/94-08/31/97

Graduate Research Traineeships

Gordon E. Legge, Psychology
Charles R. Fletcher, Psychology
Daniel Kersten, Psychology
National Science Foundation
\$112,500 - 09/15/94-08/31/95

Fulbright-MacArthur Scholars Fellowship Support

Allen F. Isaacman, History
USDE, Institute for International Studies
\$144,212 - 09/01/94-08/31/95

Minnesota-Stanford-Wisconsin MacArthur Consortium

Allen F. Isaacman, History
MacArthur Foundation
\$860,311 - 09/01/94-06/30/97

Comprehensive National Resource Center in Western European Studies

William Brustein, Sociology
U.S. Department of Education
\$239,973 - 08/15/94-08/14/95

Comprehensive National Resource Center in International Studies

Michael F. Metcalf, International Studies
U.S. Department of Education
\$232,016 - 08/15/94-08/14/95

Oversample of 1910 Hispanic Population

Steven Ruggles, History
University of Texas
\$151,277 - 08/01/94-07/31/95

IV-E Child Welfare Training

Esther F. Wattenberg, School of Social Work
Jean K. Quam, School of Social Work
St of MN, Department of Human Services
\$1,158,842 - 10/01/94-09/30/95

Community Service Grant

Andrew J. Marlow, Continuing Education and Extension
Corporation for Public Broadcasting
\$109,232 - 10/01/94-09/30/96

Longitudinal and Cross-Sectional Studies of Changes and Differences in Post School Outcomes of Adults and Youth with Severe Disabilities

Robert H. Bruininks, Educational Psychology
Barbara A. Guy, Educational Psychology
U.S. Department of Education
\$123,447 - 10/01/94-09/30/95

The Uruguay Minnesota Exchange on Higher Education Reform

Richard Heydinger, College of Education
Darrell R. Lewis, Educational Policy and Administration
U.S. Information Agency
\$101,487 - 09/01/94-08/31/97

A Longitudinal Study of School Outcomes for High Risk Children

L. Alan Sroufe, Child Development
Byron Egeland, Child Development
Spencer Foundation
\$102,325 - 09/01/94-08/31/95

Karyotypic Rearrangements in Candida Albicans

Paul T. Magee, Genetics and Cell Biology
NIH, NIAID
\$100,499 - 09/30/94-06/30/95

Flow Cytometric Study of Ciliate Physiology

Arnold G. Fredrickson, Chemical Engineering and Materials Science
Friedrich Srien, Biological Process Technology Institute
National Science Foundation
\$115,444 - 09/01/94-08/31/95

Risk Assessment of Fossil Fuel Biodegradation Processes

Lawrence P. Wackett, Gray Freshwater Biological Institute
Sergey A. Selifonov, Biochemistry (CBS)
Environmental Protection Agency
\$157,535 - 10/01/94-09/30/96

U of Mn Campus Bicycle and Intermodal Transportation Plan

Paul Tschida, Campus Master Planning
Metropolitan Council of the Twin Cities
\$118,648 - 08/01/94-01/31/96

Articulating Critical Languages on the Elementary and Secondary Levels

Dale L. Lange, Curriculum and Instruction
U.S. Department of Education
\$270,000 - 09/30/94-09/29/96

General Operating Support

Lyndel I. King, University Art Museum
USDE, Institute of Museum Services
\$112,500 - 10/01/94-09/30/96

Red River Trade Corridor Development Project

C. Eugene Allen, Animal Science
U.S. Department of Agriculture
\$177,491 - 09/01/94-02/29/96

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President			
Administrative Director	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Director of Communications and Marketing	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Editor, <i>Research Review</i>	Michael Moore	624-9398	mike@ortta.umn.edu
	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director			
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Voluntary Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Carl Anderson	626-8267	carl@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director			
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
DOD, DOE, NASA, NRC	Amy Levine	626-7441	amy-l@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Virginia Olson	624-0288	ginny@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Debra Elvine	624-5571	deb@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (IT), MINDOT, EPA	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Technology Licensing (IT)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Trademark Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences, Ag)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Renee Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort Help Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff	Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

Mailing List Changes

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For non-AIS labels only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
		City, State: (if off-campus) _____

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RESEARCH REVIEW

Office of Research and Technology Transfer

February 1995

Take Cold Fusion Seriously, Advises University Chemist

Richard Oriani Addressed IT Alumni

Cold fusion, Richard Oriani told an audience of Institute of Technology alumni, "is certainly worthy of study and funding."

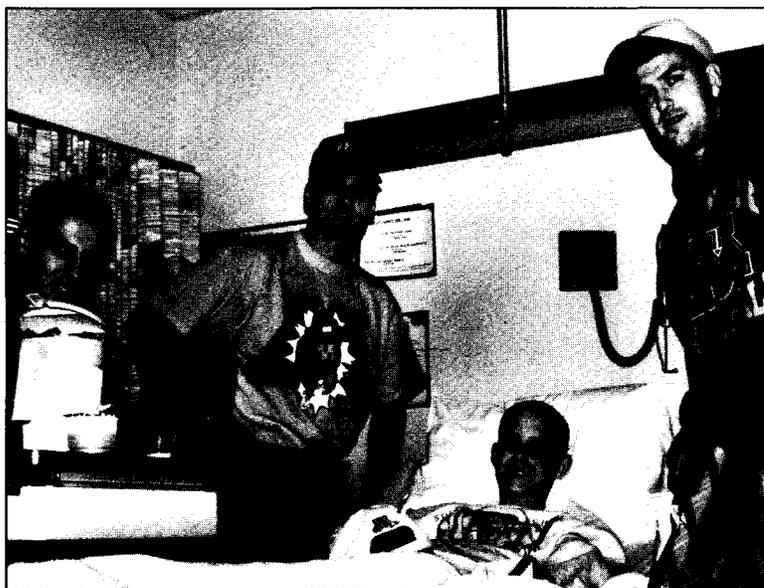
There are good reasons for skepticism, he acknowledged, but there are also good reasons for genuine interest. "Here is some new kind of nuclear physics, and it is too late to heap ridicule on it," he said.

Oriani, professor emeritus in the University's Department of Chemical Engineering and Materials Science, spoke at a December 7 seminar sponsored by the IT Alumni Society. He wished to give his audience "an appreciation of where cold fusion research is after these five years," he said. "People have made a lot of headway."

Oriani framed his presentation with comments on the reputation and abuse of cold fusion, but he devoted most of his time to reviewing two sets of data from the scientific literature: first, "credible experiments" by twelve groups of researchers, including Oriani's own group, who have measured energy production from palladium and deuterium at relatively low temperatures; second, reports from ten groups who have measured tritium, helium, neutrons and charged particles released from combinations of deuterium with palladium or titanium. Throughout his review, Oriani emphasized the lengths the experimenters went to avoid contamination of samples and errors in instruments.

When nuclear reactions release energy, Oriani's explanation of the data began, it is because some part of the mass in-

Blandin/Sota Tec Fund Awards
\$1 million for third year of
technology development
program. See page 17.



From left, Sam Jacobson, Eric Harris, Aaron Osterman, Jeremy Schlim and Ryan Wolf. The Gopher basketball players delivered gifts donated by trademark licensees to patients at the University of Minnesota Variety Club Children's Hospital. See page 8.

Inside

How a Bill Becomes Law in Minnesota	3
Fringe Benefit Rates for Budgeting Purposes	6
IRB Human Subjects: Meeting Schedules and Deadlines	7
Gophers' Gifts to the Children's Hospital	8
Graduate School News	9-11
Internal Deadlines for Limited Submission Proposals	11
Boyle of Humphrey Institute Seeks a New Democracy	12
Civic Declaration: A Call for a New Citizenship	13
Civic Renewal and Higher Education	14
Civic Storytelling	14
Doctorates Awarded in 1993 by the Big Ten et. al.	15
National Endowments Funding at the University	16
Program Information	17-20
Faculty Research, Training and Service Awards	21-22

(Continued On Page 4)

National Science Foundation Guide to Programs

The NSF *Guide to Programs* for FY95 has been published. Copies are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

Research Animal Resources

"Mouse Wet Lab"

Hands-on instruction for laboratory
manipulation of mice

February 13, 10:00 a.m.

Handling
Restraint
IV tail vein injections
IP injections
Gavaging
Orbital sinus blood collection

Pre-registration is required

Call Research Animal Resources at 4-9100

RESEARCH REVIEW

Volume XXIV/Number 8

February 1995

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; Linda Lorenz, 624-6862; or Aubrey Gold, 626-9895**.

07/01/94
06/30/95

Research

On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hornell	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates (as of December 1994).

	Academic	Graduate Students *	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	26.6%	33.7%	30.6%
7/1/96 - 6/30/97	29.0%	35.8%	28.4%

* Increase the indicated rates by 7.6 percent in 94-95 and 7.65 percent after 6/30/95 if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertation; or if 2) the student is employed for more than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009**.

Rate changes will be reflected in this section.

How a Bill Becomes Law in Minnesota

[Condensed from "State Law Process," a publication of the Minnesota House Public Information Office.]

Idea: Anyone can suggest a change to an old law or an idea for a new one, but most suggestions come from legislators.

Legal Form: The Office of the Revisor of Statutes and other legislative staff work with legislators to put a bill into proper legal form that complies with House and Senate rules.

Authors: Each bill must have a legislator to sponsor and introduce it in the Legislature. Bills are identified by file numbers and the names of those chief authors. The names of up to four co-authors may also appear on a bill.

Introduction: The chief House and Senate authors of a bill introduce it in their respective branches of the Legislature. Identical House and Senate bills are *companion bills*. The introduction is the *first reading* of a bill. The presiding officers then refer bills to appropriate committees for discussion.

Deadlines: There are committee deadlines after which a bill cannot be considered in a legislative session. Those deadlines are announced during the first half of a session. The deadlines generally do not apply to tax and appropriations bills.

Committees: A bill is discussed in one or more committees depending on its subject matter. Committees then recommend a bill's approval or disapproval and report to the full House and Senate. To testify before a committee, call the committee and ask for a place on its agenda.

Floor: After the full House or Senate accepts a committee report, a bill has its *second reading*. Then the bill is usually placed on the House or Senate agendas, called *General Orders*. A committee can recommend that a local or noncontroversial bill bypass General Orders and go onto the *Consent Calendar*, where it usually passes without debate.

General Orders: When a bill reaches General Orders, all House or Senate members have a chance to debate it and offer amendments. Afterwards, they vote to *recommend* [this is not the final vote] passage, rejection, delay or further committee action. A bill then goes onto the Consent Calendar.

Consent Calendar: The Consent Calendar is a list of bills the full House or Senate will take a final vote on. At this point, a bill has its *third reading* and legislators vote to pass or reject it. It cannot be amended unless the entire body agrees to it. If the House and Senate pass companion bills, the resulting bill goes to the governor for signature or veto.

Special Orders: Toward the end of the session, the rules committees of the House and Senate designate bills from the General Orders calendar to receive priority consideration. These *Special Orders* bills are debated, amended, and voted

on in one day. The House also has a *Rule 1.10* calendar that allows the chairs of the committees for taxes and appropriations to call up any tax or appropriations bill that has had a second reading. Rule 1.10 bills are debated, amended, and voted on in one day.

Conference: If the House and Senate versions of a bill differ, the two bills go to a conference committee of six or ten Representatives and Senators. They write a *compromise bill*.

Floor: A compromise bill then goes back to the House and Senate for another vote. If both bodies pass the compromise bill, it goes to the governor for signature or veto. If one or both bodies reject the compromise bill, it goes back to the conference committee for further consideration.

Governor: Once the governor has a bill, he may sign it, and the bill becomes law; or he may veto it within three days; or he may allow it to become law by not signing it.

Veto: During the legislative session, the Legislature can override the governor's veto with a two-thirds majority in both the House and Senate. The governor may also *line-item veto* parts of a money bill, or *pocket veto* a bill passed during the last three days of the session by not signing it within 14 days after final adjournment.

Size of the Minnesota Legislature

House: 71 DFL and 63 IR Representatives

A bill needs 68 votes to pass

A veto override requires 90 votes

Senate: 44 DFL and 23 IR Senators

A bill needs 34 votes to pass

A veto override requires 45 votes

State Government Directory

Legislative gopher: gopher.revisor.leg.state.mn.us;

Gopher path: North America/USA/Minnesota/Minnesota Legislature

House Information Office, 612/296-2146 or 800/657-3550

House Index Department, 612/296-6646

Senate Information Office, 612/296-0504

For copies of bills, Clerk's Office, 612/296-2314

House schedule, 612/296-9283

Senate schedule, 612/296-8088

Governor's Office, 612/296-3391 or 800/657-3717

Legislators' Voting Records

Legislative votes, except most votes on General Orders, are recorded in the *Journal of the House* and the *Senate Journal*. To learn how a legislator voted on a specific bill, call the House Index, 612/296-6646, or the Senate Information Office, 612/296-0504.

volved is converted to energy. For example, in one of the reactions theoretically associated with cold fusion, an atom of deuterium combines with an atom of tritium to yield helium,

“Many things are published without full understanding, and that’s the way it should be.”

a free neutron, a decrease in mass of 0.0188 atomic mass units (amu), and energy at the rate of 1.49×10^{-10} joules per amu (equivalent to 8.97×10^{13} joules per mole).

In the five most accurate energy-measurement experiments, the energy output ranged from 106 percent to 170 percent of the energy put into a palladium-deuterium system. For two groups of experimenters, there was a net gain of energy every time they tried the experiment. Oriani’s group produced a net gain in two attempts, but thirty subsequent attempts produced no energy. The inconsistent results, said Oriani, seem to depend on the sample of palladium. His third success came after the thirty failures when he obtained a new sample of palladium from a Japanese source. Other groups have measured, in three less-accurate experiments, energy production ranging from 5 to 15 times the energy input.

Oriani’s second set of reports dealt with observed effects that could only result from nuclear reactions. For example:

Fritz Will, et. al., electrolyzed heavy water with cathodes made of palladium from two different suppliers. (Heavy water is D₂O, i.e. water containing deuterium rather than common hydrogen. Will was director of the Utah Cold Fusion Institute). One type of palladium yielded no tritium. The other type yielded tritium at 50 times background levels, in four trials out of four. From that second type of palladium, 140 samples not subjected to electrolysis were found to contain no tritium.

Melvin Miles and Benjamin Bush, using palladium and heavy water, produced helium in concentrations ranging from 5.4 parts per million to 9.7 ppm. The background concentration of helium in air is 5.2 ppm. George and Stringham, using sound to cavitate heavy water on palladium foil, produced helium at 10 times background levels in ten trials out of ten. Y. R. Kucherov, et. al., by means of

“glow discharge” with a palladium electrode in low-pressure deuterium gas, produced helium at 4 to 100 times background levels and counted 10^7 neutrons per second.

Skepticism and ridicule of cold fusion began in 1989, Oriani remembered, when Stanley Pons and Martin Fleischmann announced their discovery through publicity rather than peer review. “They described their work so poorly it seems they wanted to keep it obscure,” said Oriani. His own interest in cold fusion was sparked shortly after that, by the work of Steven Jones at Brigham Young University.

Since the Pons and Fleischmann debacle, cold fusion experiments have not been adequately published, Oriani argued, because the journals *Science* and *Nature* have been “caustic and abusive” toward the work. When Oriani tried to publish his own experiments, he said, the two journals’ replies were to the effect of “We already know cold fusion doesn’t work, and you don’t understand your results. We’re not going to publish them.” Oriani’s reply: “Many things are published without full understanding, and that’s the way it should be.”

Oriani then published in the December 1990 issue of *Fusion Technology* (Oriani, John C. Nelson,

Sung-Kyu Lee, and J.H. Broadhurst, “Calorimetric Measurements of Excess Power Output During the Cathodic Charging of Deuterium into Palladium,” volume 18, pp. 652-658). *Fusion Technology* and the *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry*, where Pons and Fleischmann first published, are the only two journals still publishing such work, said Oriani.

“I want you to understand my attitude,” said Oriani. “A new idea should expect to fight its way to recognition. But in this particular case the fight has been particularly hindered by

A U.S. corporation is, however, buying every cold-fusion-related patent application it can get its hands on.

ridicule. Cold fusioners have been accused of incompetence, self-delusion, and pathological science. Bockris at Texas A&M was accused of fraud by Gary Taubes in *Science* [vol. 248 (1990), pp. 1299-1304], of doping his experiment with tritium. That certainly was not the case.”

Among sound reasons for skepticism regarding cold fusion, Oriani acknowledged several:

One, "the results are not yet [consistently] reproducible, and we don't why," he said.

Two, no one has satisfactorily explained what is taking place. "There are as many theories as theorists," said Oriani.

Three, classical physics says the nuclear reaction supposedly taking place can only take place under tremendous heat and pressure, like inside the Sun.

Four, "Cold fusion has attracted a lot of crackpots and mystics," said Oriani. "You have no idea the letters I receive from people who know cold fusion works because *the spirit* has told them."

It may not be odd, then, that cold fusion research has been difficult to publish or fund. Small federal funding has come from only one agency, the Office of Naval Research, said Oriani. A half-dozen other U.S. groups are working "on a shoestring." The University of Minnesota originally funded Oriani's experiments. They are now "self-funded," he says. In addition, the U.S. Patent Office rejects all applications that mention cold fusion.

Nonetheless, said Oriani, there are pockets of rich funding for cold fusion: SRI International (formerly the Stanford Research Institute) has \$2 million a year from the Electric Power Research Institute (EPRI), Japanese interests have equipped a lab in Southern France for Pons and Fleischmann, and significant work is being done in several labs in Japan. "The Japanese are really going after this," said Oriani. "The U.S. is getting behind the 8-ball." A U.S. corporation is, however, buying every cold-fusion-related patent application it can get its hands on, he added.

And the reason EPRI and the Japanese are investing in cold fusion? "If cold fusion is real," said Oriani, "it's an inexhaustible source of energy."

By Phil Norcross



A model of the cold fusion cell that Pons and Fleischmann showed the press in March 1989.

Courtesy University of Utah

Et Cetera

Jeff Edleson, professor in the School of Social Work, has been named to the National Academy of Science's new Panel on Research on Violence Against Women.

The Republican cochair of the Congressional Biomedical Research Caucus recently urged House and Senate budget chairs to appreciate the value of biomedical research. The cochair, Representative George Gekas of Pennsylvania, argued that each federal \$1 invested in biomedical research returns \$1.50, a figure recently presented to the National Academy of Sciences by White House Economic Advisor Laura Tyson.

Advice for writing winning grant proposals, titled "Grantsmanship: What Makes Proposals Work," appeared in *Science* 265 (23 September 1994): 1921-22.

Two faculty of the Humphrey Institute were recently named fellows of the National Academy of Public Administration: John Brandl, professor of public affairs; and Paul Light, professor of public administration and director of the Surviving Innovation Project.

Fringe Benefit Rates for Budgeting Purposes

Rates to be used for budgeting 7/1/94 - 6/30/95

	<u>Academic</u>	<u>Graduate Assistant</u>	<u>Civil Service</u>
Health Plan	2.4%	8.4%	14.3%
Unemployment Compensation	0.1%	0.0%	1.3%
Worker's Compensation	0.0%	0.0%	2.6%
Tuition Benefits	0.1%	27.7%	0.5%
Group Life and Disability	0.5%	0.0%	0.0%
Retirement	13.6%	0.0%	3.7%
FICA	4.9%	6.2%	6.0%
Medicare	1.4%	1.4%	1.4%
Total	23.0%	43.7%	29.8%

Estimated rates to be used for budgeting 7/1/95 - 6/30/96

	<u>Academic</u>	<u>Graduate Assistant</u>	<u>Civil Service</u>
Health Plan	6.0%	4.9%	14.2%
Unemployment Compensation	0.1%	0.0%	0.6%
Worker's Compensation	0.0%	0.0%	1.6%
Tuition Benefits	0.1%	28.8%	0.9%
Group Life and Disability	0.3%	0.0%	0.0%
Retirement	13.6%	0.0%	4.4%
FICA	4.8%	6.2%	7.3%
Medicare	1.7%	1.45%	1.6%
Total	26.6%	41.35%	30.6%

Estimated rates to be used for budgeting 7/1/96 - 6/30/97

	<u>Academic</u>	<u>Graduate Assistant</u>	<u>Civil Service</u>
Health Plan	9.3%	7.0%	11.6%
Unemployment Compensation	0.1%	0.0%	0.7%
Worker's Compensation	0.0%	0.0%	2.0%
Tuition Benefits	0.1%	28.8%	0.7%
Group Life and Disability	0.4%	0.0%	0.0%
Retirement	13.6%	0.0%	4.3%
FICA	4.0%	6.2%	7.6%
Medicare	1.5%	1.45%	1.5%
Total	29.0%	43.45%	28.4%

Institutional Review Board: Human Subjects Committee

Meeting Schedules and Deadlines: January - December 1995

The IRB is divided into five panels; one panel focuses on social and behavioral sciences research proposals, four panels focus on health and biological sciences research.

All IRB application forms are routed through the administrative office for the IRB and are assigned IRB panels for review or, if they meet the criteria for minimal-risk research, they are handled through an expedited review mechanism. Most studies require review by an IRB panel.

The following list of IRB meeting dates has been established as a guide for IRB members and for researchers for planning purposes. Meeting dates are subject to change. The IRB is required to conduct its meetings with a fully convened quorum of members. Members may not be present for the review of their own research or for the discussion of projects in which they participate as collaborators or subjects.

Submission deadlines are typically ten working days prior to a scheduled meeting. Due to the heavy work load of some panels, no guarantee of review can be made for a specific meeting date.

Questions concerning scheduling studies for review on a particular meeting docket should be directed to the IRB office at 624-9829.

	<u>Meeting Date</u>
January	
Med 01	January 4
Med 02	January 12
Soc 03	January 18
Med 04	January 19
Med 05	January 25
February	
Med 01	February 1
Med 02	February 9
Soc 03	February 15
Med 04	February 16
Med 05	February 22
March	
Med 01	March 1
Med 02	March 9
Soc 03	March 15
Med 04	March 16
Med 05	March 29
April	
Med 01	April 5
Med 02	April 13
Soc 03	April 19
Med 04	April 20
Med 05	April 26

May	
Med 01	May 3
Med 02	May 11
Soc 03	May 17
Med 04	May 18
Med 05	May 24
June	
Med 01	June 7
Med 02	June 15
Soc 03	June 21
Med 04	June 22
Med 05	June 28
July	
Med 01	July 5
Med 02	July 13
Soc 03	July 19
Med 04	July 20
Med 05	July 26
August	
Med 01	August 9
Med 02	August 17
Soc 03	August 23
Med 04	August 24
Med 05	August 30
September	
Med 01	September 6
Med 02	September 14
Soc 03	September 20
Med 04	September 21
Med 05	September 27
October	
Med 01	October 5
Med 02	October 12
Soc 03	October 18
Med 04	October 19
Med 05	October 25
November	
Med 01	November 1
Med 02	November 9
Soc 03	November 15
Med 04	November 16
Med 05	November 21
December	
Med 01	December 6
Med 02	December 14
Soc 03	December 20
Med 04	December 21
Med 05	December 28



In the play room on the seventh floor — from left, Rumer Rodney, Ryan Wolf, Racey Rodney and Sam Jacobson.



April Palmer shows off her new cheerleading outfit, with her mother Jenine Palmer.

Gophers' Gifts to the Children's Hospital

Patients of the Variety Club Children's Hospital were cheered over the recent holidays with gifts delivered by the Golden Gopher men's basketball team and the University's trademark licensing staff.

For the sixth year in a row, the Gopher gift drive provided skirts, hats, toys, mugs, basketballs, and other souvenirs to the children. The gifts are generously supplied by the manufacturers who license use of Goldy Gopher and other University trademarks.

The University of Minnesota trademark licensing program, run by Bob Hicks and Dave Lindquist at ORTTA, currently has license agreements with 386 manufacturers, and earns the University about \$400,000 a year. The money goes into the men's and women's athletic programs and into a general scholarship fund.



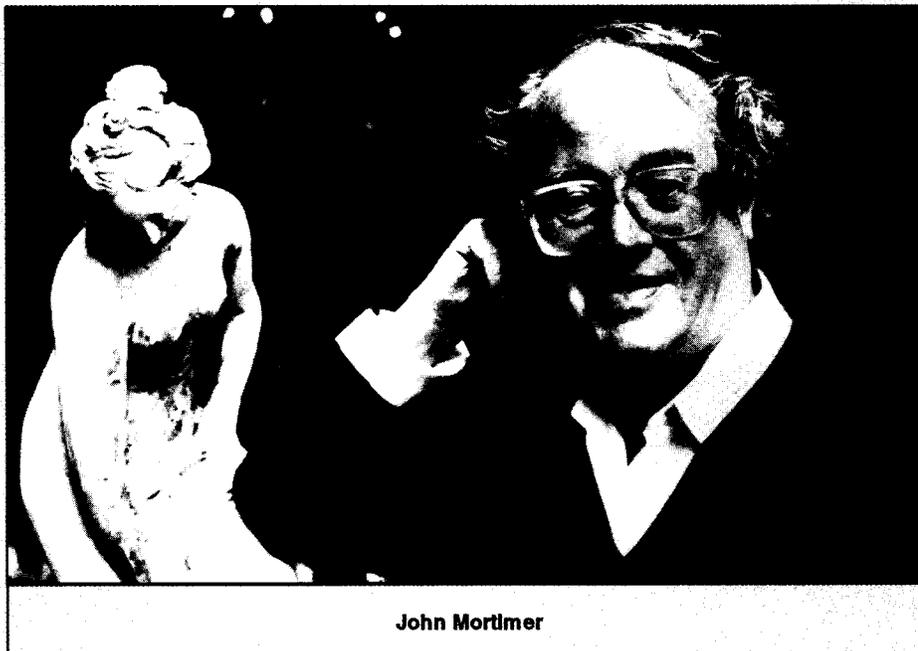
Gopher basketball players Ryan Wolf, Eric Harris and Aaron Osterman wore gowns and masks to visit children with weakened immune systems.

Photos by Phil Norcross

Graduate School News

John Mortimer to Give the Guy Stanton Ford Memorial Lecture

British novelist and screen writer John Mortimer will present "Writing and the Law," this year's Guy Stanton Ford Lecture, on Wednesday, March 15, at 12:15 p.m. in the School of Music's Ted Mann Concert Hall, West Bank campus. John Mortimer is a former barrister and the author of many novels, film scripts, and plays for stage, television, and radio. His "Rumpole of the Bailey" British television series and his adaptation of *Brideshead Revisited* for television are well known to American audiences. His autobiography, *Clinging to the Wreckage*, won the 1982 *Yorkshire Post* Book of the Year Award. The second volume of his autobiography, *Murderers and Other Friends*, is being released by Viking Penguin in March in time for the lecture.



John Mortimer

The lecture, which is free and open to the public, is sponsored by the Graduate School in honor of Guy Stanton Ford, a former University of Minnesota history professor, Graduate School dean, and president. If you have questions about the lecture, please contact the Graduate School Fellowship Office at 625-7579 (or gsfellow@maroon.tc.umn.edu).

Grant-in-Aid of Research, Artistry and Scholarship Program

The Graduate School Grant-in-Aid of Research, Artistry and Scholarship Program is a competitive small-grants program available to tenured or tenure-track faculty members of the University of Minnesota. Most awards for 1994-95 were made in the spring of 1994 with a July 1 starting date; they were listed in the January 1995 issue of *Research Review*. Additional awards made in the fall of 1994 with a starting date of December 16, 1994, are listed below.

The deadline for 1995-96 grants is Monday, March 6, 1995. Application materials (revised January 1995) are available from your department office, or by contacting wallin@mail-box.mail.umn.edu, or by calling the Graduate School Faculty Research Office at 625-2356.

Paul Anderson, professor \$20,846
Duluth School of Medicine
 Sequence and expression of carbamoyl phosphate synthetase III in trout

Melissa Avery, assistant professor	\$20,500
<i>School of Nursing</i>	
Acute effect of exercise in women with gestational diabetes	
Timothy Behrens, assistant professor	\$22,000
<i>Department of Medicine</i>	
Regulation of bcl-x expression in B lymphocytes	
Saifallah Benjaafar, assistant professor	\$14,100
<i>Department of Mechanical Engineering</i>	
Modeling, measurement and evaluation of sequencing flexibility in advanced manufacturing systems	
Yanjie Bian, assistant professor	\$14,680
<i>Department of Sociology</i>	
A socioeconomic index of Chinese occupations	
Elmer Birney, professor	\$12,000
<i>Department of Ecology, Evolution, and Behavior</i>	
Biogeography and gene-flow patterns in Patagonian small mammals	

(Next Page)

Graduate School News

John Bischof, assistant professor	\$16,277	Emi Ito, associate professor	\$7,400
<i>Department of Mechanical Engineering</i>		<i>Department of Geology and Geophysics</i>	
Freezing of liver tissue: biophysics and viability		Paleomonsoon variability: reconstruction from Eastern Tibet	
James Bodley, professor	\$23,000	Ronald Jemmerson, associate professor	\$18,550
<i>Department of Biochemistry (Medical School)</i>		<i>Department of Microbiology</i>	
The regulation of ribosome movement along mRNA		X-ray crystallography of antigen-antibody complexes	
David M. Brown, professor	\$6,035	Terry Jones, professor	\$12,600
<i>Department of Laboratory Medicine and Pathology</i>		<i>Department of Astronomy</i>	
Nitric oxide and renal hemodynamics in diabetic rats		Completion of an infrared spectro-polarimeter for astrophysical research	
David R. Brown, associate professor	\$11,661	Sungsoo Kim, assistant professor	\$11,700
<i>Department of Veterinary Pathobiology</i>		<i>Department of Accounting, Duluth</i>	
Opiate receptors in murine gut-associated lymphoid tissue		Interest rate swaps: firm characteristics, motivation and differential market reactions	
Henry Buchwald, professor	\$11,000	Murugappa Krishnan, associate professor	\$14,800
<i>Department of Surgery</i>		<i>Carlson School of Management</i>	
Interim funding for lovastatin-tumor research		Topics in information and financial markets	
John Carter, professor	\$16,855	Candace Kruttschnitt, professor	\$10,670
<i>Department of Horticultural Science</i>		<i>Department of Sociology</i>	
Thermal regulation of <i>TUB8</i> , a β -tubulin gene of <i>Arabidopsis</i>		Gender and social structure: women's prison in the 1990s	
Varadarajan Chari, professor	\$14,400	Helga Leitner, associate professor	\$9,800
<i>Department of Economics</i>		<i>Department of Geography</i>	
The role of industry evolution in transitions to market economies		Competitive advantage and urban systems change: a cross-national evolutionary analysis	
Michael Cherlin, associate professor	\$8,400	Qinqin Liu, assistant professor	\$21,000
<i>School of Music</i>		<i>Department of Biology, Duluth</i>	
Form and function of musical phrase in the early 20th century		Analysis of subcellular structural components in maize postmeiotic mutants	
Richard Davis, assistant professor	\$9,423	Horace Loh, professor	\$10,000
<i>Department of Chemical Engineering, Duluth</i>		<i>Department of Pharmacology</i>	
Fast-reaction kinetics of ozone with refractory organic compounds in water		Inverted microscope/micromanipulator instrumentation for ES cell microinjection	
Evelyn Firchow, professor	\$12,550	Philip Lowry, assistant professor	\$24,887
<i>Department of German</i>		<i>School of Public Health</i>	
Diplomatic edition and concordance to Notker Labeo's <i>Categories</i>		BCG vaccine trial in young adults	
Maria Gallo-Meagher, assistant professor	\$20,600	Henry Mann, associate professor	\$14,000
<i>Department of Agronomy and Plant Genetics</i>		<i>College of Pharmacy</i>	
RFLP subtraction: a molecular method for identifying <i>Fusarium graminearum</i> strains		High-performance liquid chromatograph for pharmaceutical research	
Shirley Garner, professor	\$6,300	James McCarthy, associate professor	\$10,000
<i>Department of English</i>		<i>Department of Laboratory Medicine and Pathology</i>	
Antifeminism in the academy, <i>Hurricane Alice</i> , and prostitution		Request for matching funds for the purchase of a fluorescent plate reader	
Florence Gleason, professor	\$18,000	Eric Munson, assistant professor	\$21,525
<i>Department of Plant Biology</i>		<i>Department of Chemistry</i>	
Nitrate metabolism in cyanobacteria: role of thioredoxin		NMR studies of materials and biological systems using laser-polarized xenon	
Nelson Goldberg, professor	\$23,000	Elizabeth Nash, associate professor	\$15,000
<i>Department of Biochemistry (Medical School)</i>		<i>Department of Theatre Arts and Dance</i>	
Regulation by adenylate kinase of energy-linked cell function		The compilation of a historical anthology entitled <i>Just Remember Me: Artistic Reminiscences of African-American Classical Singers</i>	
Kenneth Hodgson, associate professor	\$7,500	Bruce Peckham, assistant professor	\$12,600
<i>Division of Humanities, Morris</i>		<i>Department of Mathematics and Statistics, Duluth</i>	
"Songs of the Prairie" project		Bifurcations of periodic orbits for maps	
Christopher Honda, assistant professor	\$12,364		
<i>Department of Cell Biology and Neuroanatomy</i>			
Functional and neurochemical studies of sensory neurons			

(Next Page)

Graduate School News

Christopher Pennell, assistant professor	\$20,000
<i>Department of Laboratory Medicine and Pathology</i>	
Request for matching funds to purchase a BIAcore system	
Irwin Rubenstein, professor	\$18,000
<i>Department of Plant Biology</i>	
Premature stop codons: roles in post-transcriptional regulation	
Beth Schueler, assistant professor	\$14,450
<i>Department of Radiology</i>	
3D reconstruction of cerebral aneurysms from x-ray angiograms	
Andreas Stein, assistant professor	\$10,000
<i>Department of Chemistry</i>	
Purchase of a UV/VIS reflectance spectrometer	
Robert Sterner, associate professor	\$14,600
<i>Department of Ecology, Evolution, and Behavior</i>	
Biochemical life-history constraints: RNA content in freshwater zooplankton	
Raj Suryanarayanan, associate professor	\$11,000
<i>College of Pharmacy</i>	
Low temperature attachment for powder x-ray diffractometer	
Elaine Tarone, professor	\$12,600
<i>Institute of Linguistics and Asian and Slavic Languages and Literatures</i>	
Language use by children in bilingual Spanish-immersion classes	
Andrew Teel, assistant professor	\$12,600
<i>Department of Electrical Engineering</i>	
Control saturation: performance issues	
Shanghai Teng, assistant professor	\$18,550
<i>Department of Computer Science</i>	
A geometric approach to mesh partitioning with application to parallel scientific computing	
Ann Waltner, associate professor	\$12,600
<i>Department of History</i>	
Women in China's past	
John Watkins, assistant professor	\$14,600
<i>Department of English</i>	
In Queen Elizabeth's Day: remembering Elizabeth I, 1603-1714	
Elizabeth Wattenberg, assistant professor	\$12,600
<i>School of Public Health</i>	
Activation of the mitogen-activated protein kinase by Fumonisin B1	
Robert Williams, professor	\$5,277
<i>Department of Music, Duluth</i>	
Symphony no. 3 (<i>Sinfonia Espansiva</i>), first movement, by Carl Nielsen: an arrangement for concert band	
Jiann-Shiou Yang, associate professor	\$12,722
<i>Department of Computer Engineering, Duluth</i>	
Robust controller design for linear discrete-time systems	
Richard Ziegler, professor	\$9,735
<i>Duluth School of Medicine</i>	
Identification of HIV-1 gp120 receptor on neuronal cells	

Internal Deadlines for Limited Submission Proposals

The Office of the Vice President for Research and Dean of the Graduate School coordinates the internal announcement and selection for external prizes, awards, scholarships and fellowships for which a *limited number of nominees/applicants are allowed per institution* in disciplines which could cross collegiate and/or campus boundaries. The following *internal* deadlines have been established for 1995; additional information may be requested by calling 625-2356.

Dreyfus New Faculty Award (chemistry, chemical engineering, biochemistry)	Monday, April 17, 1995
Packard Fellowships in Science and Engineering	Monday, April 17, 1995
Searle Scholars Program (biomedical sciences)	Monday, August 7, 1995
Pew Scholars in the Biomedical Sciences	Monday, August 7, 1995
Burroughs Wellcome Career Awards in the Biomedical Sciences	Monday, August 7, 1995
NEH Summer Stipends (humanities)	Monday, August 28, 1995
Howard Foundation Fellowships (music composition and musicology)	Monday, August 28, 1995
NSF Presidential Faculty Fellows Program (science and engineering)	Monday, September 25, 1995
Dreyfus Teacher/Scholar Award (chemistry, chemical engineering, biochemistry)	Monday, September 25, 1995
Brookdale National Fellowship Program (aging)	Monday, October 16, 1995
Burroughs Wellcome Scholar Award in Toxicology	Monday, October 16, 1995
Burroughs Wellcome Scholar Award in Molecular Parasitology	Monday, November 20, 1995
Burroughs Wellcome New Investigator Award in Molecular Parasitology	Monday, November 20, 1995
Salzburg Seminar (government, economics, business, law, science, education, arts)	Monday, November 20, 1995
John Merck Scholars Program in the Biology of Developmental Disabilities in Children (cognitive science and neurobiology)	Monday, December 4, 1995

Boyte, of Humphrey Institute, Seeks a New Democracy

Because a “chasm” has opened between the government and the people of the United States; because U.S. democracy has turned into “irresponsible spectatorship;” and because the population has been divided between the professionals, from whom we expect the answers, and the lay public, generally seen as a set of problems to solve; Harry C. Boyte and his colleagues are campaigning for “a new citizenship.”

“America is a vast laboratory of civic experiments that have been radically under-explored conceptually,” says Boyte, a senior fellow of the University’s Humphrey Institute. “Many people feel very discouraged, but there are really solid lessons and a rich background to build on for bringing people back into public life. Our work is to look at the core lessons and translate them into other environments to build a larger public practice.”

The new citizenship urges that the local civic organizations that used to “mediate” among citizens, government, and commerce should be renewed. Through our churches, schools, charities, chambers of commerce and labor unions we should transfer government’s power back to ourselves, it says. Government and social welfare organizations should provide us with tools and professional collaborators.

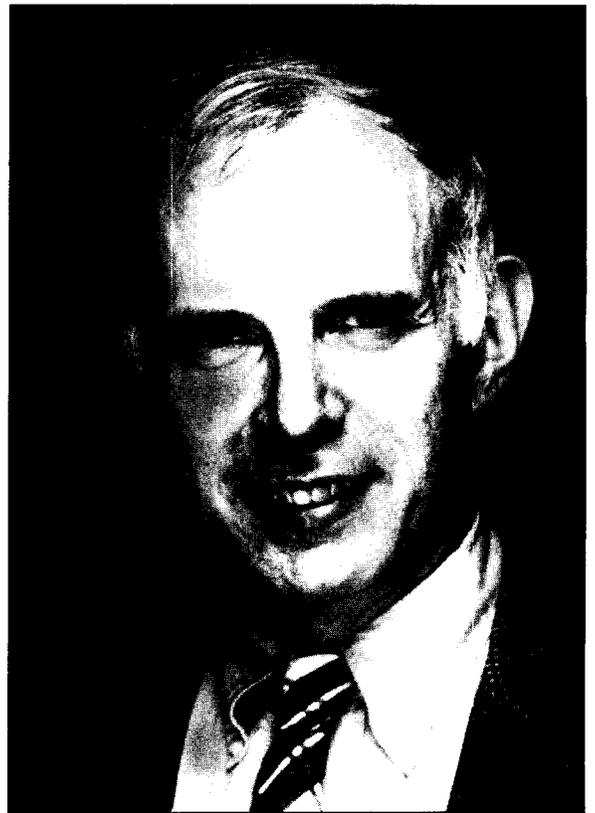
The new citizenship has just created the “American Civic Forum,” a “confederation of organizations” that works for transfer of power to “civil society.” At its founding meeting in Washington, D.C., last December, the Forum discussed its *Civic Declaration*, portions of which are reprinted on the following pages along with parts of other documents that led up to it.

Many of these documents are authored or coauthored by Harry Boyte, codirector of the four-year-old Center for Democracy and Citizenship at the Humphrey Institute (also codirected by Edwin Fogelman, chair of political science). Boyte entered civic politics during the civil

Through our churches, schools, charities, chambers of commerce and labor unions we should transfer government’s power back to ourselves.

rights movement of the 1960s, when he worked with the Southern Christian Leadership Conference.

Since joining the Humphrey Institute in the late 1980s, Boyte and his center have taught the new citizenship to Saint Bernard’s School in St. Paul, to civic organizations in riot-torn Los Angeles, and to the Florida Commission on Minority Health, for a few examples. They have also



Harry C. Boyte

worked closely with the Minnesota Extension Service, calling it “an important example of experts *on tap*, not on top.” They enjoy the support of former congresspeople Vin Weber and Tim Penny of Minnesota. They have had financial support from the Lilly Endowment, the W. K. Kellogg Foundation, the Ford Foundation, the General Mills Foundation, the Surdna Foundation, the Corporation for National and Community Service, and the Minnesota Department of Education.

The newly created American Civic Forum is based in Boyte’s office at the Humphrey Institute and at the Walt Whitman Center of Rutgers University. It also has ties to the College of Saint Catherine, the Kettering Foundation, the Southern Christian Leadership Conference, the Pew Partnership for Civic Change, the National Center for Neighborhood Enterprise, and the Domestic Policy Council of the Clinton White House, among others.

For more information, call Tim Sheldon, administrator at the Center for Democracy and Citizenship at the Humphrey Institute, 612/625-0142.

Civic Declaration: A Call for a New Citizenship

A New Citizenship Project of the American Civic Forum

An Occasional Paper of the Kettering Foundation, December 9, 1994

Background

The American Civic Forum includes many diverse points of view about questions such as the appropriate role of government and the market in our social and public life; we, the undersigned, do not all agree with all elements in the following stories or all the nuances of emphasis. Yet we are joined together by a common commitment to an understanding of citizenship, politics, and public life with greater dignity and productiveness than that which now prevails.

Call for a New Citizenship

We, the signers of this *Civic Declaration*, representing a mosaic of communities, occupations, cultures, and perspectives, call for a New Citizenship in America. We believe that we as citizens must reclaim responsibility for and power over our nation's public affairs.

The new citizenship to which we commit ourselves is open, diversified, inclusive, and nonpartisan: a civic forum comprising every segment of America. But it is not a stand-in for any and every kind of activity. It is the provenance neither of the state-centered Left, which thinks government can solve every problem, nor the market-centered Right, which believes in the social power of the "invisible hand." It is skeptical, both of the "technocratic center," where faith resides in experts, and of talk-show democracy, whose politics of grievance and self-righteousness distorts public discussion, confounding democracy with demagoguery. . . .

We speak from the vantage point of a "third sector"—that vibrant array of voluntary associations, religious congregations, schools and colleges, the free press, professional groups, and community organizations that mediate between government and the market—which has shown time and again in American history that there are immense possibilities for public experiment and for civic work. We encourage the civic dimension of every identity—the renewal of the citizen-politician, the truly "civil" civil servant, civic professional, civic-minded businessperson, religious leader, union activist, community organizer, and citizen-soldier. We reassert the authority of civic and community life against the encroachments of government, however well-intended. We also claim the importance of civic and community life against the impact of unfettered markets, however efficient. . . .

The New Citizenship calls on all Americans to reassert common agency and to repossess democratic institutions. We invite our fellow citizens to grasp the popular sovereignty that is the root of our democracy and to make it real in our everyday lives. We ask America to be America. . . .

The American Civic Forum

We envision a loose and open medium called the American Civic Forum to advance the New Citizenship. The American Civic Forum is a potential vehicle for exchanging experiences and enhancing civic work across many environments. It has three broad purposes:

Call for a New Citizenship: Building on this *Civic Declaration*, the American Civic Forum will advance a call for a New Citizenship: Americans need to stop complaining and reclaim authority and responsibility for public affairs. The Civic Forum draws from many American traditions, including that which informed our nation's founding moment: the Committees of Correspondence. Like the Committees of Correspondence, the Civic Forum will help to launch a wide-ranging conversation among citizens about the need for the "powers of the republic" to reside in the people themselves. Moreover, it will help us develop and discover what citizenship means in the information age.

Citizen-Government Partnership: The American Civic Forum will work with legislative bodies and government agencies that seek citizen-government partnership in problem solving. It will help create a nonpartisan political voice at every level of policy making that emphasizes civic problem solving and civic capacity building and the idea of government as a catalytic agent. We believe that the major policy arenas of our time—from health care to education—will be fundamentally reconceived in positive ways by putting citizens at the center as deliberators and actors, not mainly in the roles of clients and consumers.

Civic Storytelling: The American Civic Forum will help to build a network of civic educators, in many settings, dedicated to analyzing and disseminating civic stories as an alternative to the mood of discouragement and despair in America. Civic storytelling, when undertaken in a thoughtful and nonsentimental way, is critical to the public articulation of different models of "hero." It has much to contribute to the nation's public life as compared to the celebrity focus that now predominates.

Many of these practices and functions have already been initiated by the emerging constituencies of a New Citizenship. The American Civic Forum is conceived as a diverse and pluralist confederation of groups and individuals dedicated to this citizenship. It will support existing efforts, while it will seek to give them greater visibility and public profile.

Civic Renewal and Higher Education

[Excerpts from a] Working Paper for the Reinventing Citizenship Project

by David Brown, March 4, 1994 [Brown is an associate of the Kettering Foundation and editor of its journal, *Higher Education Exchange*]

No doubt the crisis [in U.S. higher education] is financial, but it arises, in substantial part, from legislators and taxpayers having second thoughts about the kind of returns they are getting on their investment. . . .

For Americans, higher education has always been a very pragmatic investment—used both for personal advancement and for civic purposes too. Personal advancement still rides high in the saddle; civic purpose has not been seen for some time. Once we educated a small class of relatively privileged young men to serve and govern their communities. Now we educate a much larger and heterogeneous cohort with hardly a thought given to their preparation for civic work. . . .

The chasm [between professionals and lay public] is especially wide between academics and citizens—too wide for anyone to leap without risking injury. Perhaps no other professional world is more removed now from democratic culture than the hierarchies within and among academic departments. . . .

Charles Lindblom and David Cohen, in a remarkably candid report, argue that the academic world often fails to understand, or at least to concede, that “a great deal of the world’s problem-solving is and ought to be accomplished through various forms of interaction that substitutes action for thought, understanding, or analysis” [Lindblom and Cohen, *Usable Knowledge*, Yale University Press, 1979, p. 10]. . . .

Not only do many academic professionals refuse or fail to connect with real-world constituencies, but they also set a terrible example in their academic hierarchies on campus and the expert-novice distance maintained in lecture halls and classrooms. That is not how people come together in the real world to solve problems. . . .

Academic professionals rarely offer students any learning structures in the classroom that resemble the complex organizations and diverse communities that await them. . . .

Furthermore, colleges and universities have been using a consumer language to attract and retain students without examining how much it conflicts with any civic ambition that they might still entertain for their graduates.

Civic Storytelling

A crucial part of the new citizenship is “civic storytelling,” the spreading of tales of civic success. The following civic stories are from American Civic Forum Civic Declaration, 1994; Boyte & Barber, “Reinventing Citizenship,” 1994; and Kari, Boyte and Jennings, et. al., “Health as a Civic Question,” 1994.

Oregon’s health reform plan, which from the outside seemed controversial, passed with overwhelming bipartisan support—57 to 3 in the Assembly and 24 to 2 in the Senate. This was only possible because of the tens of thousands of hours of citizen discussion that created a wide public consensus about core health values. . . . In less than two years since the plan went into effect, some 35,000 people have left the AFDC rolls, largely because they no longer need to be affiliated with AFDC to receive health coverage.

The Sisters of St. Joseph in St. Paul, Minnesota, sold their hospital and worked with fifteen city neighborhoods with high numbers of working poor to establish neighborhood clinics. Staffed primarily by volunteer medical personnel, these clinics offer low-cost or cost-free care to uninsured and underinsured people who are not covered by Medicaid.

Central Medical Center (CMC), an African-American hospital in St. Louis, used its buildings as public spaces for community problem-solving. They brought more than 30 organizations and community programs into the hospital: GED classes, block clubs, women’s groups, AA groups, AIDS groups, and church groups. This action opened opportunities

for a variety of new collaborative efforts with the community and increased use of the hospital. The police department worked with CMC to create a training program for community patrols and a joint chaplaincy-police project on violence.

The Minnesota Extension Service has recast its programs over the last three years, away from providing services and information, toward work with citizen teams on community problems, returning extension to its older understanding that community participation is required for problem solving. . . .

The Minnesota 4-H program, involving more than 240,000 children and teenagers across the state, has undertaken an intensive process of citizenship education over the past four years, applying to a variety of its programs the civic education approach called “citizen politics.” As youth have learned to think of themselves as effective citizens developing public skills through their work, volunteers and staff report a substantial deepening of the sophistication and seriousness of projects like Community Pride, a 4-H youth problem-solving program that has more than 20,000 participants each year.

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Boyte, Harry C., and Benjamin R. Barber. "Reinventing Citizenship: The First Six Months. Report to the Ford Foundation." Humphrey Institute. June 1994.

Boyte, Harry C., and Nancy Kari. "Citizen Politics: Breaking the Iron Cage." *Dissent* 41 (Spring 1994) 205-211.

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{Next Column}

The Center for Democracy and Citizenship, Humphrey Institute

"The mission of the Center for Democracy and Citizenship is the promotion of democracy and the strengthening of citizenship and civic education within a variety of settings, with a special emphasis on youth. The center expresses its mission through outreach, teaching and research projects designed to strengthen community and civic capacities. It approaches civic participation in ways that democratize patterns of professional interaction with citizens and communities and involves young people and others in governance and responsibility for problem solving. . . . In most cases, the center's work is in transition from successful pilot projects to larger demonstration and dissemination projects."

From a CDC brochure

———. "Building Block for an American Renewal." *Los Angeles Times*, 25 December 1991, B7.

———. *CommonWealth: A Return to Citizen Politics*. New York: Macmillan, 1989.

Evans, Sara M., and Harry C. Boyte. *Free Spaces: The Sources of Democratic Change in America*, 2d. ed. Univ. of Chicago Press, 1992.

Boyte, Harry C. "Reagan vs. the Neighborhoods." *Social Policy* 12 (Spring 1982) 3-8.

Doctorates Awarded in 1993 by the Big Ten et. al.

	Physics, Astron.	Chem.	Earth Sci.	Math	Comp. Sci.	Ag.	Biol.	Social Sci.	Psych.	Chem. Eng.	Elect. Eng.	Mech. Eng.	Other	Total
U. of Ill., Urbana-C.	34	28	6	15	33	23	79	66	30	9	57	21	232	706
Ohio State	18	32	11	22	13	27	64	71	34	7	23	21	291	683
U. of Wisconsin	35	40	14	30	9	31	108	68	21	28	18	29	205	674
U. of Michigan	20	28	13	14	12	2	75	58	44	8	43	51	203	662
U. of Minnesota	18	38	8	19	15	33	81	56	35	22	16	14	238	628
Penn. State	18	29	19	18	11	14	53	32	29	8	20	33	149	511
Purdue	18	46	11	24	7	20	68	25	29	20	39	26	96	503
Michigan State	14	22	3	10	10	39	61	43	26	6	15	4	117	390
Indiana U.	9	23	11	6	11	—	29	49	25	—	—	—	202	365
Northwestern U.	10	36	2	15	18	—	49	28	21	18	8	20	94	364
U. of Chicago	27	24	8	17	4	—	40	82	12	—	—	—	132	346
U. of Iowa	5	24	4	21	8	—	32	23	16	1	4	7	163	334
Iowa State	6	30	5	22	5	52	23	40	11	13	9	11	71	322
U. of Ill., Chicago	5	13	—	20	9	—	44	31	14	5	3	13	75	245

Source: Susan T. Hill, *Selected Data on Science and Engineering Doctorate Awards 1993*, National Science Foundation, 1994 (NSF 94-318). For a complete copy, inquire at pubs@nsf.gov.

National Endowments Funding at the University

Considering the threats that the National Endowments for the Arts (NEA) and for the Humanities (NEH) are suffering in Congress, it seems appropriate to take stock of what the endowments have sent us recently.

A recent press release from NEH lists two new awards to University faculty:

For a travelling exhibition of turn-of-the-century theatre sets, Lance Brockman, professor in Theatre Arts and Dance, and Lyndel King, director of the Weisman Art Museum, won a grant of \$250,000 direct costs.

Brockman and King's project will display and interpret theatrical scenery, props, lighting, and other artifacts of 100-year-old theatre practice in the United States. The materials were preserved by fraternal organizations, like the Free Masons and the Odd Fellows, who created theatres for initiation rites and continue to use them for that purpose.

The exhibit, about 200 pieces altogether, will open at the Weisman museum in October, 1996, in conjunction with a meeting of the International Mason Research Society. Over the following two to three years, Brockman plans to take the exhibit to museums in Fargo, San Antonio, and Long Beach. The grant runs from mid-'95 through '98.

The full title of the grant is "The Drama of Initiation: Theatre and Masonic Ritual—A traveling exhibition on the influence and use of theatrical techniques in fraternal organizations and the reasons for their popularity during the late 19th and early 20th centuries."

Oliver Nicholson, assistant professor in Classical and Near-Eastern Studies, was awarded \$30,000 by NEH for a "Fellowship to Research the Anatomy of Persecution."

Nine other NEH and NEA grants are also active at the University now; they are listed in the next column.

Current Awards from NEH

Museum Assessment Program

Martin De Witt, Tweed Museum of Art, Duluth
\$1,925 for 04/04/94 to 04/03/95

Kerlan Collection Manuscripts and Illustrations Project

Merry Schellinger, Libraries
\$96,337 for 07/01/94 to 06/30/96

Access and Preservation for Dance Research Resources

Alan Lathrop, Libraries
Barbara Bezat, Libraries
\$27,158 for 01/01/94 to 04/18/95

Foreign Language Immersion Program

Michael Metcalf, International Studies
Diane Tedick, Curriculum and Instruction
\$240,000 for 10/01/93 to 09/30/96

East-European Migration to the United States in the Post-World-War-II Period

Rudolph Vecoli, Immigration History
\$130,158 for 07/01/93 to 06/30/95

A Stronger Soul Within a Finer Frame: Portraying African-Americans in the Black Renaissance—The Minnesota Tour

Lyndel King, Weisman Art Museum
Austin McLean, Libraries
\$65,722 for 04/01/92 to 07/31/95

Current Awards from NEA

Mimbres Pottery Exhibition

[Mimbres people lived in New Mexico in A.D. 200 to 1150]
Lyndel King, Weisman Art Museum
\$20,000 for 01/01/94 to 06/30/96

Dance Presenters

Dale Schatzlein, Concerts and Lectures
\$14,600 for 03/15/94 to 03/14/95

Presenting Organizations

Dale Schatzlein, Concerts and Lectures
\$5,000 for 05/30/94 to 05/30/95

Et Cetera

The metric system has enjoyed "considerable progress" at most federal agencies over the last two years, according to the U.S. Department of Commerce and a press release from Congress. Commerce's 1992 report on the metric conversion describes obstacles to conversion; the 1993 report describes progress at federal agencies. Conversion to the metric system by federal agencies is required by the 1988 Omnibus Trade and Competitiveness Act. The reports are available by calling 301/975-3690 or mclmore@micf.nist.gov.

NSF Young Investigator Awards for 1994 were recently granted to two University faculty: Ellen K. Longmire, assistant professor in Aerospace Engineering and Mechanics; and Susan C. Mantell, assistant professor in Mechanical Engineering. Longmire investigates "particle-laden and buoyancy-driven flows," said NSF, and Mantell investigates "nondestructive evaluation for polymer composites." From 1,435 nominations for 1994, NSF relied on merit review to select 197 awardees. NYI awards provide up to \$100,000 per year for five years from NSF and private sources.

■ Sota Tec Fund

1995 Technology Development Program

Request for Preproposals; Deadline, March 10, 1995

Sota Tec Fund, a not-for-profit research fund sponsored by the Blandin Foundation of Grand Rapids, Minnesota, announces the availability of up to \$1 million to support development of University of Minnesota technologies with potential for commercialization within the state. The Blandin Foundation's mission is to strengthen rural Minnesota communities. The foundation created Sota Tec Fund to help University researchers develop new technologies and increase rural employment opportunities. This is the third year of a long-term economic development collaboration between the University and the Blandin Foundation/Sota Tec Fund.

Proposals are invited for projects that can be commercialized within one to three years. Preference will be given to proposals that identify an existing company—especially one outside the Twin Cities metropolitan area—as a partner in the commercialization effort. Sota Tec Fund also encourages proposals for R&D projects to advance or test University of Minnesota technologies that appear to have commercial potential but do not have a company partner or a rural focus.

Faculty of the University of Minnesota are encouraged to submit preproposals to the Office of Research and Technology Transfer no later than March 10, 1995. A total of \$1 million is available, but individual grants will not exceed \$200,000. Grants will not be made for basic research.

Preproposals should be no longer than three pages and must include the following information:

- Name of the principal investigator, department, campus mailing address and telephone number, and title of the project.
- A brief nontechnical description of the technology and its commercial application. If the technology is in collaboration with a Minnesota company, describe the company's existing products and resources.
- A list of all sources of funding previously used to develop the technology, including sponsor, account number and amount.
- A brief description of the work that would be necessary to develop and/or test the commercial potential of the technology.
- A list of all invention disclosures, patent applications and patents concerning the technology.

- An estimated time line and summary budget (\$200,000 maximum). Include salary and fringe benefits of scientific staff involved, up to 10 percent of the faculty member's base salary. Include purchases of equipment and supplies. Include funds for only that travel needed to collaborate with companies that may be involved in commercializing the technology. Do not include funds for overhead, clerical support or travel to scientific meetings.

Investigators whose preproposals are selected by Sota Tech Fund for further consideration will be provided with complete program guidelines and asked to submit a more detailed proposal. Deadline for submission of full proposals will be **June 30, 1995**. All awards will be made by September 1, 1995.

Submit preproposals to Erhard Bieber, Office of Patents and Technology Marketing, 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226 (U.S. or campus mail).

■ Health Resources and Services Administration

Geriatric Education Centers

The Health Resources and Services Administration (HRSA) has announced FY95 Grants for Geriatric Education Centers. Grants may be awarded to support the development of collaborative arrangements involving several health professions schools and health care facilities.

These arrangements, called Geriatric Education Centers (GECs), are established to facilitate training of health profession faculty, students and practitioners in the diagnosis, treatment and prevention of disease, disability and other health problems of the aged. Health professionals include allopathic physicians, osteopathic physicians, dentists, optometrists, podiatrists, pharmacists, nurses, nurse practitioners, physician assistants, chiropractors, clinical psychologists, health administrators and allied health professionals.

Projects supported under these grants must offer training involving four or more health professions, one of which must be allopathic or osteopathic medicine.

Approximately \$6,000,000 will be available in FY95 for this program; total continuation support is recommended at \$4,100,000. Therefore it is anticipated that \$1,900,000 will be available to support 13 new, competing awards. Applicants should apply for direct costs of no more than \$100,000 (for single institutions) or \$150,000 (for consortia of three or more institutions) for the first year of funding.

{Next Page}

The application deadline is **March 3, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Ms. Jacquelyn Whitaker (D-31), Grants Management Specialist, Bureau of Health Professions, Health Resources and Services Administration, Parklawn Building, Room 8C-26, 5600 Fishers Lane, Rockville, MD 20857; 301/443-6857.

■ National Institute of Standards and Technology

ATP Focused Technology Program

Six new focus areas of technology — all based on input from U.S. industry — have been defined by the National Institute of Standards and Technology (NIST), Advanced Technology Program. Companies and consortia will be able to propose projects for \$785 million of long-range, cost-shared support.

The new focused technology programs are founded on ideas from “white papers” submitted by industry and from workshops held around the country.

This announcement *does not* constitute a call for proposals at this time; competition deadlines for each of the six focus areas will be set in the near future.

The programs, all slated for five years, are Motor Vehicle Manufacturing Technology, \$185 million; Catalysis and Biocatalysis Technologies, \$160 million; Materials Processing for Heavy Manufacturing, \$145 million; Digital Data Storage, \$150 million; Digital Video in Information Networks, \$120 million; and Advanced Vapor Compression Refrigeration Systems, \$50 million.

ATP General Competition

NIST has also announced its general competition under the Advanced Technology Program (ATP). The 1994 general competition funded 32 programs out of 397 proposals received. They spanned a range of innovations in biotechnology, medicine, software, manufacturing, industrial chemistry, electronics and materials.

Under the general competition, project submissions from any area of technology are eligible. Projects will be cost-shared and carried out by industry in partnership with universities, government labs and other non-profit organizations. An estimated \$25 to \$30 million in funding will be available.

ATP New Tools for DNA Diagnostics

The Advanced Technology Program, NIST, has announced the second focused program competition in the area of Tools for DNA Diagnostics.

The technical goal of the program is to develop cost-effective methods to determine, analyze and store DNA sequences for a wide variety of diagnostic applications, such as for agricultural, environmental and health care uses. The business goal of the program is to support the development of new and potentially very large markets for DNA diagnostic systems.

An estimated \$15 million is available for funding under this competition.

The application deadline is **March 29, 1995**. Details of the competition were published in the December 21, 1994, issue of *Commerce Business Daily*.

ATP General Information

Joint ventures funded by ATP include universities, government labs and nonprofit research organizations as members of the joint ventures. However, a university or government lab, while it may catalyze the joint venture, cannot be the leader or formal project proposer. A joint venture must include at least two for-profit companies. The industrial members of the venture must define the research and commercialization plans and have the leadership role in controlling the project.

Call 800/ATP-FUND (287-3863), fax 301/926-9524, e-mail atp@micf.nist.gov, or write to Michael Baum, Advanced Technology Project, A430 Administration Building, NIST, Gaithersburg, MD 20899-0001; 301/975-2763, baum@micf.nist.gov.

■ National Science Foundation

Combined Research-Curriculum Development Program

The Directorate for Engineering of the National Science Foundation has announced a continuation in FY95 of the program supporting Combined Research-Curriculum Development (CRCDD). This program emphasizes the need to incorporate exciting research advances in important technology areas into the upper-level undergraduate and graduate engineering curricula.

The nation's economic well-being and employment opportunities often lie in the very areas where there may be a notable need for courses, textbooks, instructional modules or instructional laboratories and involvement in curriculum change on the part of faculty researchers. The objective of the CRCDD program is to stimulate faculty researchers to place renewed value on quality education and curriculum innovation in the context that education and research are of equal value and complementary parts of an integrated whole.

Each proposal should focus on a particular topic which is of industrial and national importance and is in an area supported by the Directorate for Engineering. The topic area should be one in which the development of curricula based on newly created fundamental engineering knowledge will enhance the education of future engineers and enable them to contribute to economic competitiveness in a more direct and substantive way.

Project Components

Key features of the **research** component include:

- high-quality, innovative research in technologically important areas; such research should be currently underway or recently completed and need not have been supported by NSF; and
- research ready and appropriate to be integrated into curriculum development and classroom testing or application.

Key features of the **curriculum development** component include:

- innovative approaches and directions to curriculum development;
- integration of the proposed curriculum into the existing engineering curriculum;
- emphasis on upper-level undergraduate and/or introductory graduate courses;

- innovative education delivery and interactive learning technologies, where appropriate; and
- relevance of the curriculum innovation to improving the students' preparation in the proposed technology area.

Projects should emphasize the formation of faculty teams from engineering and other disciplines, as appropriate to address the topic, with participation by undergraduate and/or graduate students. Involvement with industrial partners, professional society colleagues, national laboratory participants, persons with expertise in education methodology and pedagogy, etc., is encouraged where appropriate.

To assist in the selection of reviewers and for other planning purposes, potential principal investigators should indicate plans to submit a concept paper by submitting a one-paragraph statement of intent to the Engineering Education and Centers (EEC) Division by **February 24, 1995**. This statement of intent is not mandatory. The statement should contain the title, technological element of the proposed effort, principal investigator/s, institution/s, and the disciplines involved. Send to EEC by e-mail to mipoats@nsf.gov, by fax to 703/306-0290 or 306-0326, or by letter to Mrs. Mary Poats, NSF, Directorate for Engineering, Engineering Education and Centers Division, Room 585, 4201 Wilson Boulevard, Arlington, VA 22230.

Concept papers must be submitted to EEC by **March 31, 1995**. Submission of a concept paper is a prerequisite to, but does not obligate the submission of, a proposal. Directions for the concept paper are listed in the announcement. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Ask for NSF 94-171.

The final proposal will be invited and is due **June 12, 1995**. For further information contact Mrs. Mary Poats at the address above; 703/306-1380.

■ U.S. Department of Energy

Toroidal Magnetic Confinement Systems

The Office of Fusion Energy, Office of Energy Research, U.S. Department of Energy (DOE), announces its interest in receiving grant applications for innovative experiments in toroidal magnetic confinement systems. These applications may be either to continue research on existing experimental devices or to start new experimental projects.

[Next Page]

The Office of Fusion Energy is interested in applications for innovative research that have the possibility of leading to improved toroidal magnetic fusion power plants (this includes tokamak-based power plants with improved performance). The research should be aimed at elucidating the physics principles of such improved toroidal magnetic power systems. Projects are desired which are unique, first of their kind, and provide new insights.

Priority will be given to applications that can produce experimental results within three to five years after grant initiation.

It is anticipated that up to \$5 million will be available to start new projects. Applications requiring yearly funding as low as \$50,000 are welcome and encouraged.

The application deadline is **June 1, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. Ronald A. Blanken, Division of Advanced Physics and Technology, Office of Fusion Energy, ER-542, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874; 301/903-3306 or 903-3421, internet ronald.blanken@mailgw.er.doe.gov.

■ NICHD

Pain Management for Persons with Physical Disabilities

The National Institute of Child Health and Human Development, Center for Medical Rehabilitation Research, invites applications for program project grants (P01) to conduct rehabilitation research to improve the prevention and management of chronic pain experienced by persons with designated physical impairments.

The chronic pain of interest is a secondary condition associated with the primary impairments of spinal cord injury, amputation, cerebral palsy, spina bifida, or traumatic brain injury. Program project applications are encouraged that take into account the pathophysiological, subjective, behavioral, cognitive and social manifestations of chronic pain as a secondary condition.

At least two awards will be made. Approximately \$1 million in direct costs will be committed to fund applications submitted in response to this RFA.

A letter of intent is due by **March 15, 1995**. The full proposal is due **May 16, 1995**. A complete copy of the RFA

(Next Column)

(HD-95-010) is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Louis A. Quatrano, National Center for Medical Rehabilitation Research, NICHD, Executive Building, Room 2A03, 6100 Executive Boulevard MSC 7510, Bethesda, MD 20892-7510; 301/402-2242, e-mail quatrnl@hd01.nichd.nih.gov.

■ U.S. Geological Survey

Data Grant Program for Land Processes Research

The U.S. Geological Survey (USGS), National Mapping Division, is initiating a Data Grant Program to distribute remotely sensed data acquired by Earth-orbiting satellites.

Landsat multispectral scanner (MSS) data and advanced very-high-resolution radiometer (AVHRR) data will be provided at no cost to a limited number of qualified nonprofit organizations that will apply these data to land processes research. The data are limited to conterminous United States, Alaska and Hawaii sites.

Remotely sensed data offered through this program and identified in all related requests must be applied to land processes research. Land processes are defined broadly as the set of natural processes and human activities that affect the chemical composition, physical properties, and geographic distribution of materials (including inland and coastal waters and ice on the continental land surface). Effects of these processes must be expressed at the surface if the data being offered are to be useful. Researchers engaged in any field of physical, biological or social science and who are interested in investigating land processes and their effects are encouraged to apply.

This program provides no support other than data. Nonprofit organizations may apply by submitting Data Grant Program requests.

The deadline for submitting Data Grant Program requests is **April 1, 1995**. Specific information on data types, guidelines for submission and evaluation of requests, procedures for data selection and retrieval and schedules for request completion and reporting are outlined in an information packet. The packet may be requested by writing to Data Grant Program, Science and Applications Branch, U.S. Geological Survey, EROS Data Center, Sioux Falls, SD 57198; fax 605/594-6589, e-mail eros@eros.cr.usgs.gov. Include your name, organization, address and telephone number.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
December 1994	366	\$39,067,961
Awards Processed		
December 1994	199	21,077,993
Proposals Submitted		
July 1994 - December 1994	1,995	313,896,532
Awards Processed		
July 1994 - December 1994	2,300	250,876,166
Proposals Submitted		
July 1993 - December 1994	2,005	273,390,766
Awards Processed		
July 1993 - December 1994	1,444	128,531,267

PCB Concentrations in Algae from the Milwaukee and Manitowoc Rivers

Deborah L. Swackhamer, Environmental and Occupational Health
USDI, Geological Survey
\$24,500 - 09/01/94-06/30/95

The Wound Site: Contexts for Regeneration and Repair

Raymond E. Sicard, Surgery
Brett Levay-Young, Surgery
Michael D. Caldwell, Surgery
NIH, NIGMS
\$188,724 - 12/01/94-11/30/95

Structure/Function Analysis of Human T Cell B1 Integrins

Yoji Shimizu, Laboratory Medicine and Pathology
NIH, NIAID
\$176,967 - 12/01/94-11/30/95

Intracellular Infection by Invasive Group A Streptococci

Paul P. Cleary, Microbiology
NIH, NIAMS
\$107,176 - 12/01/94-11/30/95

Nutritional and Hormonal Regulation of Hepatic Genes

Howard C. Towle, Biochemistry (Med Sch)
NIH, NIDDK
\$168,758 - 12/01/94-11/30/95

Thyroid Hormone Receptor and Gene Expression

Howard C. Towle, Biochemistry (Med Sch)
NIH, NIDDK
\$117,639 - 12/01/94-11/30/95

General Clinical Research Center

James G. White, Pediatrics
R. Paul Robertson, Medicine
John Bantle, Medicine
NIH, NCRR
\$516,027 - 12/01/94-02/28/95

Public Interest Law Consortium

Stephen Befort, Law School
Minnesota Justice Foundation
\$26,791 - 09/01/94-08/31/95

A Study of High-Time-Resolution Electric and Magnetic Fields

John Wygant, Physics and Astronomy
NASA
\$88,900 - 09/01/94-08/31/95

An Experimental and Computational Study of Issues Associated with Cold-Starting Diesel Engines

John Abraham, Mechanical Engineering
David L. Hofeldt, Mechanical Engineering
David B. Kittelson, Mechanical Engineering
University of Wisconsin, Madison
\$125,583 - 09/15/94-09/14/95

Water-Quality Effects of Water Operations in the Arkansas River

Mark Person, Geology and Geophysics
USDI, Geological Survey
\$24,382 - 11/01/94-09/30/95

Permeability of Partially Molten Anorthosite

Martha J. Daines, Geology and Geophysics
National Science Foundation
\$38,505 - 12/01/94-11/30/95

Scanning Probe Microscope

Stephen Y. Chou, Electrical Engineering
USDoD, Army
\$140,000 - 11/23/94-11/30/95

Integrated Active Switch Matrices

Anand Gopinath, Electrical Engineering
Spectra Diode Labs
\$23,000 - 10/01/94-01/31/95

Software Testing Techniques

Wei-tek Tsai, Computer Science
Hitachi, Ltd.
\$127,356 - 09/21/94-09/20/96

Application of MRI and Polymer Science Theory (PST) to Food Storage Stability

Rongsheng Ruan, Food Science and Nutrition (Ag)
Theodore Labuza, Food Science and Nutrition (Ag)
USDoD, Army
\$52,038 - 11/03/94-11/02/95

Conservation of Biodiversity in Coastal Systems of Michigan

Francesca J. Cuthbert, Fisheries and Wildlife
James L. Smith, Fisheries and Wildlife
Lauren C. Wemmer, Fisheries and Wildlife
USDA
\$20,000 - 09/20/94-09/15/97

Household Responses to Macroeconomic Change in Poland

Earl W. Morris, Design, Housing and Apparel
Iowa State University
\$23,944 - 10/01/94-09/30/96

Area Office: Midwest Regional Center for Drug-Free Schools and Communities

Geoffrey M. Maruyama, Educational Psychology
North-Central Regional Educational Laboratory
\$340,000 - 10/01/94-09/30/95

Neurological/Psychological Assessment of the Old-Old

Thomas M. Skovholt, Educational Psychology
Kate Hefferman, Educational Psychology
Veterans Administration
\$17,520 - 10/01/94-09/30/95

Tropic Structure and the Stoichiometry of Nitrogen and Phosphorus in the Pelagic Food Web

Robert W. Sterner, Gray Freshwater Biological Institute
National Science Foundation
\$16,322 - 09/22/94-07/31/95

Red River Trade Corridor Development Project

C. Eugene Allen, Animal Science
USDA
\$177,491 - 09/01/94-02/29/96

Succession, Biodiversity, and Ecosystem Function at the Prairie-Forest Border

G. David Tilman, Ecology, Evolution and Behavior
Peter B. Reich, Forest Resources
David F. Grigal, Soil Science
National Science Foundation
\$580,000 - 11/15/94-10/31/95

Bisulfide Effects on Enzymes and Cell Signalling

Stephen Harvey, Biochemistry (CBS)
Gary L. Nelsestuen, Biochemistry (CBS)
NIH, NIEHS
\$15,593 - 12/01/94-11/30/95

Intelligent Vehicle Highway Systems (IVHS) Research, Laboratory and Program Support

Dennis Foderberg, Center for Transportation Studies
St of MN, Department of Transportation
\$1,358,000 - 01/03/94-06/30/95

Minnesota Sea Grant College Program 1994-1996

Michael McDonald, Sea Grant, Duluth
USDOC
\$22,101 - 02/01/94-01/31/95

The Role of the Benthic Nepheloid Layer in Foodchain Exposure to Toxic Chemicals

Deborah L. Swackhamer, Environmental and Occupational Health
USDOC
\$35,899 - 02/01/94-07/31/95

Randomized Intervention for Families of Persons With Dementia of Alzheimer's Type (DAT)

Sandra R. Edwardson, School of Nursing
Kenneth W. Hepburn, Family Practice and Community Health
University of Texas, Houston
\$79,673 - 08/01/94-07/31/95

Multiple Myeloma Tumor Biology Project—Part B Molecular Genetics

Brian Van Ness, Biochemistry (Med Sch)
NIH, NCI
\$28,792 - 07/01/94-04/30/95

Amino Acid Supplementation for Male Market Turkeys

Paul E. Waibel, Animal Science
C. Wendell Carlson, Animal Science
Midwest Poultry Consortium, Inc.
\$28,000 - 08/01/94-07/31/95

Improvement of Breeder Turkeys' Reproductive Performance

Mohamed E. El Halawani, Animal Science
Minnesota Turkey Research and Market Development Board
\$50,000 - 08/01/94-07/31/95

Establishing the Hormonal Origins, Chemical Identity, and Chemosong Function of F Prostaglandin Pheromones

Peter Sorensen, Fisheries and Wildlife
National Science Foundation
\$238,000 - 08/01/91-01/31/96

Nitric Oxide and CaM Kinase in Synaptic Plasticity and Learning

Paul F. Chapman, Psychology
National Science Foundation
\$236,534 - 07/27/94-07/31/97

Development of a Peer Consultant Initiative

Gary W. Leske, Vocational and Technical Education
Rob Shumer, Vocational and Technical Education
W. K. Kellogg Foundation
\$989,082 - 06/01/94-09/30/97

Settling, Burial, and Recycling of Particle-Reactive Chemicals in Oligotrophic Systems, Lake Superior

Steven J. Eisenreich, Gray Freshwater Biological Institute
Elisabeth Lipiatou, Gray Freshwater Biological Institute
USDOC, NOAA
\$49,704 - 02/01/94-06/30/95

Ecology and Conservation of the West Indian Whistling-Duck

D. Frank McKinney, Bell Museum of Natural History
Ducks Unlimited, Inc.
\$26,544 - 01/01/94-03/31/95

Partnership to Address Violence through Education (PAVE)

Mary McEvoy, Educational Psychology
Sandra Christenson, Educational Psychology
U.S. Department of Education
\$965,495 - 01/01/95-12/31/95

User Interface Toolkit Architectures for Distributed Multimedia Applications

Joseph A. Konstan, Computer Science
National Science Foundation
\$99,865 - 08/01/94-07/31/97

Rural Telemedicine Grant Program

Theodore Thompson, Hospital and Clinic
David Garloff, Health Sciences Learning Resources
Health Resources and Services Administration
\$817,500 - 09/30/94-09/29/97

Temperature Thresholds at which Applied Cooling Prevents Pressure Ulcers and at which Applied Warming Promotes Healing

Paul A. Iaizzo, Anesthesiology
Ephraim M. Sparrow, Mechanical Engineering
National Science Foundation
\$49,999 - 12/01/94-10/31/95

Economic Impacts of the Conservation Reserve Program

Richard A. Levins, Agricultural and Applied Economics
Iowa State University
\$12,300 - 09/01/94-09/30/95

Ingredients of Academic Success

Eric Durbrow, Institute of Child Development
Spencer Foundation
\$5,103 - 10/01/94-09/30/95

Equipment to House Transgenic Mouse Models of Human Disease

Harry T. Orr, Laboratory Medicine and Pathology
Minnesota Medical Foundation
\$27,000 - 11/01/94-10/31/95

Evaluation of the Minnesota Care Program

Nicole Lurie, School of Public Health
St of MN, Department of Health
\$65,000 - 03/01/93-06/30/95

Cost of Capital to Agricultural Cooperatives

Glenn Pederson, Agricultural and Applied Economics
USDA
\$27,785 - 04/15/93-06/30/96

Electrobiogenesis with Coal Feedstocks

Kenneth Valentas, Biological Process Technology Institute
Jeffrey Tate, Biological Process Technology Institute
USDI
\$25,000 - 08/12/93-12/30/94

Corrections

Vehicle Following (Platooning) using CCD Cameras

Nikolaos Papanikolopoulos, Computer Science
Maria Gini, Computer Science
St of MN, Department of Transportation
\$45,000 - 10/01/94-09/30/95

Maternal Diet and Risk of Brain Tumor in Children

Lawrence Kushi, Epidemiology
NIH, NCI
\$52,860 - 05/13/94-02/28/95

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only) Voluntary Health	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Carl Anderson	626-8267	carl@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Director, Technology Licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing (IT, CBS, IAFHE)	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Director, Technology Licensing (Health Sciences)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Director, Trademark and Software Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Licensing (Health Sciences)	Grace Malilay	624-6426	grace@ortta.umn.edu
Technology Transfer Coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort Help Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff	Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! It is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For non-AIS labels only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
		City, State: (if off-campus) _____

Please include your mailing label!

Clip and mail this page to:

Tove Jespersen
ORTTA
1100 Washington Avenue South, Suite 201
Minneapolis, MN 55415-1226
(U.S. or campus mail)



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UNIVERSITY OF MINNESOTA

RESEARCH REVIEW

Office of Research and Technology Transfer

March 1995

External Professional Activities Please Comment on Draft Policy

Draft Allows One Day in Seven for Work Outside the University

by Mark L. Brenner, Acting Vice President for Research and Acting Dean, Graduate School

Please study and comment on this draft of the University policy governing conflicts of commitment by academic employees (See pages 11 through 18).

The draft Policy on Conflict of Commitment defines *extra professional activities* outside of academic employees' normal, contractual appointments, and specifies how much time employees may spend on such activities—one day in seven. The new policy will replace the current policy on consulting.

The basic premise of the new policy is that extra professional activities should be encouraged. They are generally

rewarding for employees, and the University directly benefits because such activities broaden the faculty's experience and enrich their teaching and research. However, extra professional activities must not interfere with academic employees' ability to carry out their responsibilities to the University, and they must not inappropriately use resources or facilities of the University. Hence the goal of this policy is to clarify which activities are part of the regular workload, the number of consulting days an academic employee has available, the activities that require prior approval, and reporting and monitoring mechanisms.

This draft policy was developed over the past year by the University's Academic Integrity Committee. It has been reviewed by the Faculty Senate committees for faculty affairs, research,

(Continued On Page 10)

Summary of Extra Professional Activities

Activities that might compete for employees' time:

- Board membership, except boards of professional organizations and governmental agencies
- Employment by or consulting for a business that competes with services provided by the University
- Consulting
- Teaching for another institution of higher education
- Teaching within the University for overload pay, including teaching for CE&E

Activities that might compete with University interests:

- Board membership, except boards of professional organizations and governmental agencies
- Employment by or consulting for a business that competes with services provided by the University
- Receiving or conducting sponsored research for another organization that ordinarily would be conducted under the auspices of the University.
- Teaching for another institution of higher education

Inside

Regent Kim Hosts Presentation to Legislators	2
Grant Application Forms Available on Net	3
International Landscape Ecology Symposium	3
IRB: Human Subjects	4
New Biosafety Procedures	5
A Summary of ORTTA Activity in FY94	6
Two Senior Licensing Associates Join ORTTA	7
Graduate School News	8
Draft Policy on External Professional Activities	11 - 18
Law Says Don't Lobby Congress on Federal Dime	19
Top 10 Institutions in Total R&D Spending	19
Program Information	20 - 24
Faculty Research, Training and Service Awards	25 - 26

Regent Kim Hosts Presentation to Legislators

University 2000 and the importance of having a world-class research university were the topics at a January 11 breakfast reception for state legislators in the 4th Congressional District. Regent Hyon T. Kim hosted the meeting to share information about the University's research contributions to the state.

Regent Kim welcomed the legislators and thanked them for supporting her selection to the Board of Regents. She related how much she is learning about the University's research enterprises through laboratory visits and discussions with faculty. She encouraged legislators to support the University's partnership proposal for implementing the U 2000 strategic plan. Maintaining high-quality research in areas important to Minnesota is an especially productive long-term investment, she noted.

President Hasselmo then summarized the U 2000 proposal for the legislators and answered their questions, which mostly dealt with the need to keep tuition low, access open, and graduation times reasonable. The legislators congratulated the University on improvements in the undergraduate experience. One senator noted that he was receiving far

(Continued On Page 5)

RESEARCH REVIEW

Volume XXIV/Number 9

March 1995

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994;** this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; or Aubrey Gold, 626-9895**.

	07/01/94
	06/30/95
Research	
On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hormel	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates (as of December 1994).

	Academic	Graduate Students *	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	26.6%	33.7%	30.6%
7/1/96 - 6/30/97	29.0%	35.8%	28.4%

* Increase the indicated rates by 7.6 percent in 94-95 and 7.65 percent after 6/30/95 if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertation; or if 2) the student is employed for more than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009**.

Rate changes will be reflected in this section.

Grant Application Forms Available on Internet

Electronic templates for federal grant application forms are available over the Internet. Five NIH, NSF, and DoD application forms are available for Macintosh and Windows applications. In combination with users' word-processing and spreadsheet software, the electronic templates reproduce the paper application forms.

The catalog of template files, and instructions for downloading them, can be found through ORTTA's gopher (ORTTA main menu/Forms & Templates/Instructions for Obtaining Grant Application Templates). The files can be downloaded via anonymous ftp. The templates are in the public domain and available free of charge.

The template archive is chiefly the work of Dr. John Livesey at the University of the Pacific. Livesey and colleagues at the University of Washington created the PHS 398 template; other researchers provided the other templates. The archive is physically located at the Medical College of Wisconsin.

Livesey's documentation says that "Although the government agencies have not sanctioned the use of these specific files, they have been used regularly and widely for the last few years without difficulties."

The following forms and formats are available:

PHS 398

- the Public Health Service Grant Application
 - for Macintosh, Microsoft Word, and Microsoft Excel
 - for Windows, Word, and Excel
 - for Windows, WordPerfect, and Lotus 1-2-3
 - for Windows and QuattroPro

PHS 416-1

- application for a PHS Individual National Research Service Award or Senior International Fellowship Award
 - for Macintosh and Word

PHS 2590

- application for a PHS noncompeting continuation
 - for Macintosh, Word, and Excel
 - for Windows, Word, and Excel

NSF GPG

- the NSF Grant Proposal Guide
 - for Macintosh, Word, and Excel

ARO 51, ARO 52A, SF 1411

- for proposals to the Army Research Office
 - for Macintosh, Word, and Excel
 - for Windows, Word, and Excel

International Landscape Ecology Symposium

East Bank, April 22-26

The tenth annual symposium for landscape ecology will take place on the East Bank campus in Minneapolis, April 22-26. The symposium will focus on the ecological consequences of human activity, and include most angles on landscape ecology—policy, practice, scholarship, and scientific and cultural studies.

Titled "Working in a World Dominated by Humans: Theory and Practice of Landscape Ecology," the symposium will present about 55 research papers, 35 case studies, and 60 posters. It is expected to draw 800 to 900 participants.

Sessions for presenting papers are titled, for example, "Greenways," "Land Use/Landscape Planning," "Aesthetic Concepts in Design," "Vegetation Patterns," and "Animal Habitat and Pattern."

Seven field trips will depart from the symposium for the North Shore of Lake Superior, the Phalen watershed in St. Paul, and the Minnesota, St. Croix, and Whitewater river valleys.

Plenary speakers include aquatic biologist Henry Lickers, director of the environmental division of the Mohawk Akwasane Tribe; Leslie Kerr, chief planner for national wildlife refuges in Alaska; Paul Johnson, chief of the U.S. Natural Resources Conservation Service (formerly the Soil Conservation Service); and Jane Smiley, Pulitzer winner for *A Thousand Acres*.

The symposium is sponsored by the International Association for Landscape Ecology, along with the University, the Minnesota Department of Natural Resources, the Forest Service, the Fish and Wildlife Service, and the Natural Resources Conservation Service.

Among the symposium's organizers are faculty and staff from eight University departments: Agronomy and Plant Genetics; Ecology, Evolution and Behavior; Entomology; Forest Resources; Horticultural Science; Landscape Architecture; the Natural Resources Research Institute; and the Center for Urban and Regional Affairs.

The symposium meets at the Radisson Hotel on the East Bank. For more information, call Nancy Grubb at the University's Professional Development and Conference Services, 612/625-6358, ngrubb@pdcs.cee.umn.edu.

Institutional Review Board: Human Subjects Committee

Continuing Review Requirements

As noted in recent *Research Review* articles, IRBs are being instructed to step up the reminder/review process for continuing review of approved research. The IRBs have already been informed by the OPRR that a waiver or grace period is *not allowed*. The University of Minnesota IRB is in receipt of further instruction for detailed reporting, and it is modifying its continuing review forms to accommodate the new requirements.

The following is the "Dear Colleague" letter sent to all IRBs subject to the federal regulations governing human subject research across the U.S. It should be noted that the University of Minnesota Institutional Review Board: Human Subjects Committee (IRB) is in compliance with these regulations; modifications will be made to highlight the substance of the reports required. These changes can be expected within the coming months.

NIH
Office for Protection from Research Risks
January 10, 1995
Subject: Continuing Review — Institutional and
Institutional Review Board Responsibilities

Dear Colleague:

This letter is being forwarded to Institutional Officials and Institutional Review Board (IRB) Chairs throughout the country as a reminder of IRB and institutional responsibilities in continuing review of research activities.

The Department of Health and Human Services (HHS) Regulations, Title 45 Code of Federal Regulations Part 46 (45 CFR 46), require at Section 46.109(e) that "an IRB shall conduct continuing review covered by this policy at intervals appropriate to the degree of risk, but not less than once per year. . . ."

Continuing review must be substantive and meaningful. Review by the convened IRB, with recorded vote, is required unless the research is otherwise appropriate for expedited review under Section 46.110. Ordinarily, if research did not qualify for expedited review at the time of initial review, it does not qualify for expedited review at the time of continuing review. It is also possible that research activities that were previously judged as exempt in accordance with Section 46.101(b), or were qualified for expedited review in accordance with Section 46.110, have changed or will change, such that other than expedited IRB review is now required.

OPRR interprets "not less than once per year" review to mean review on or before the 1-year anniversary date of the *previous IRB review* required by 45 CFR 46, even though

the research activity may not begin until some time after the IRB has given approval.

The regulations at 45 CFR 46 outline the minimum requirements for continuing review. They do not provide specific instructions to institutions or IRBs on how to set up their own rules for continuing review within the framework of the regulations. To ensure adequate protection of the rights and welfare of research subjects, institutions and IRBs may impose greater or more detailed standards of protection for human subjects depending upon the nature or location of the study, the degree of risk involved to the subject population, and other factors.

Investigators must also report to the IRB planned changes in the conduct of the study, since these may affect the protection of human subjects. Minor changes proposed for previously approved research may be reviewed in an expedited manner prior to the scheduled continuing review date in accordance with Section 46.110. When a proposed change in a research study is *not minor*, then the IRB must review and approve changes at a convened meeting before changes can be implemented. The only exception is the rare circumstance in which a change is necessary to eliminate apparent immediate hazards to the research subjects. In this case, the IRB should be promptly informed of the change following its implementation and should review the change to determine that it is consistent with protection of human subjects. Unanticipated risks to subjects or new information that may affect the risk/benefit assessment must be promptly reported to, and reviewed by, the IRB to ensure adequate protection of human subjects.

The regulations at Section 46.111 set forth the criteria to be satisfied if an IRB is to approve research. These include determinations by the IRB regarding risks, potential benefits, informed consent, and safeguards for human subjects. The review criteria at Section 46.111 are a requirement during continuing review just as they are in initial review.

In conducting continuing review, the IRB should review, at a minimum, the protocol and any amendments as well as a status report on the progress of the research, including a) the number of subjects accrued; b) a description of any adverse events or unanticipated problems involving risks to subjects or others, withdrawal of subjects from the research, or complaints about the research; c) a summary of any recent literature, findings, or other relevant information, especially information about risks associated with the research; and d) a copy of the current informed consent document. Primary reviewer systems may be employed, so long as the full IRB

(Continued On Next Page)

Environmental Health and Safety New Biosafety Procedures

by Jim Lauer, Assistant Director for Occupational Health and Safety, Department of Environmental Health and Safety

New Autoclave Bags for Decontamination of Infectious Waste

Plastic bags for the decontamination of infectious materials by autoclaving (saturated steam under pressure) have been changed from orange colored bags with the biohazard symbol to plain bags without a biohazard symbol. The reason for this change is that waste facilities receiving the University's regular (noninfectious) waste were refusing to take the autoclaved orange bags because the bags were labeled with the biohazard symbol.

To comply with OSHA requirements, the new plain bags must be in a reusable support container that is labeled with the biohazard symbol (this denotes that the material is infectious waste). After the infectious waste in the support container has been autoclaved, the waste can be disposed of in the normal or regular waste stream. If you have questions concerning this change, please contact Jim Lauer at 626-5621.

Researchers Must File Forms

The University's IBC (Institutional Biosafety Committee) has been assigned responsibility for monitoring all research and research facilities involved with recombinant DNA, infectious agents (microbiological agents infectious to humans/class 2 and above agents), and biological toxins. Persons using such materials must submit to the IBC one of the following:

- Artificial Gene Transfer and Recombinant DNA Form
- Infectious Agent Usage Form
- Biological Toxin Usage Form

These forms may be obtained from Jim Lauer, W-158 Boynton H.S., 626-5621. In the near future, these forms will be available electronically. Look for an announcement in an upcoming *Research Review*.

IRB: Human Subjects

{Continued From Previous Page}

receives the above information. Primary reviewers should also receive a copy of the complete protocol including any modifications previously approved by the IRB.

Review of the currently approved consent document must ensure that the information is still accurate and complete. Any significant new findings that may relate to the subject's willingness to continue participation should be provided to the subject in accordance with Section 46.116(b)(5). Review of currently approved or proposed consent documents must occur during the scheduled continuing review of research by the IRB, but may be done more frequently if new information becomes available.

Institutions must make investigators aware of the IRB's policies and procedures concerning reporting and continuing review requirements. The IRB's written procedures pertaining to continuing review should be distributed throughout the institution to ensure that all those involved in research activities understand their individual responsibilities.

In summary, in approving the continuation of ongoing research, an IRB attests to its satisfaction that the research continues to be conducted in accord with *all relevant provisions* of 45 CFR 46. Please examine your institutional and IRB practices to ensure this.

Sincerely,
Gary B. Ellis, Ph.D., Director
Office for Protection from Research Risks

Regent Kim

{Continued From Page 2}

fewer calls from constituents complaining about their sons' or daughters' inability to get into classes or to graduate in four years.

Hasselmo introduced Associate Vice President for Research and Technology Transfer Tony Potami, who gave a brief presentation on the University's research levels and contributions to Minnesota's economy. Several inventions licensed to companies in the 4th Congressional District were shown and described. Each legislator received a booklet summarizing the University's research and technology transfer activities.

Two representatives of local industry, Thomas Brunelle, CEO of Lec Tec Corporation, and Rex Krueger of the Minnesota High Technology Council, closed the presentation by voicing their strong support for the University's budget request.

Research and Technology Transfer

A Summary of Activity in Fiscal Year 1994

Text of a report presented to the Board of Regents on February 9, 1995, by Mark L. Brenner, Acting Vice President for Research and Acting Dean of the Graduate School

Over the past year the University of Minnesota has experienced the full spectrum of issues and emotions inherent in being a major research university. We are caught up, along with other research universities, in a period of pervasive change in the way research is funded, administered, and overseen. Ironically, whereas 20 years ago universities were criticized for being ivory towers of irrelevant research, today they are criticized for being too closely connected to the real world and for having conflicts of interest. This indicates that research universities need to do a better job explaining what they do, and what that means for their students and external constituencies.

The University of Minnesota is one of a handful of universities that are ahead of the curve in revising policies and procedures to adapt to external changes. We have:

- revised policies on research misconduct and conflicts of interest;
- improved the system for calculating overhead costs and as a result were granted a recovery increase from 40 percent to 45 percent;
- implemented a less burdensome but more accountable system for reporting the effort of our research teams;
- studied all the players in sponsored project management and begun implementing changes to clarify the responsibilities of each and to improve the process of administering externally supported projects;
- appointed a public-private partnerships committee to advise us on our more complicated relationships with private entities; and,
- are working on a draft of a new regents policy on conflicts of commitment.

Clearly, the University of Minnesota has taken to heart the need for change, and as a result we are committed to being able to effectively compete for external support in the next few years.

In terms of our long-term competitiveness, we have two strategic guides. The first is "Enhancing Research Effectiveness: The Foundation for Learning and Teaching in the 21st Century," the report of the Strategic Planning Committee for Research and Postbaccalaureate Education, completed last year under the former vice president for re-

search, Anne Petersen. We are developing specific mechanisms for following through on the planning committee's recommendations to evaluate the quality of academic units, to recruit and retain outstanding faculty members, to invest in areas of excellence, to encourage interdisciplinary research and external partnerships, and to communicate the value of research.

The second strategic guide for research is, of course, the University 2000 goal to be a leading global research university that leverages its resources for the benefit of Minnesota. Included in this report are data that will be the benchmark for the critical measures approved last month: To increase sponsored funding of research, training, and public service based on annual expenditures of funds from all sources; and to maintain our national ranking in total amount of federally sponsored funding for research and development.

Research

The University receives sponsored funding because its faculty submit creative and carefully thought-out proposals for projects. As is apparent in the number of their proposals, faculty continue to be extremely creative and hard-working. After dipping slightly in FY 1993, proposals increased in FY 1994, by 7.3 percent in number and 6.0 percent in amount.

The trend in awards shows us how successful our faculty continue to be in the competition for external support. This trend needs to be viewed over five- to ten-year periods, because a large multiyear award, like the Army High-Performance Computing Research Center, can result in large blips for any one year, such as 1989. There was some concern at first regarding the drop in awards for FY 1994. But further study revealed that the apparent drop was the result of a processing backlog that had built up in the Office of Research and Technology Transfer Administration (ORTTA), due to the unusually large amount of audit activity that consumed significant staff time, and because of the increasing number and complexity of awards. ORTTA's grants and contracts staff has now caught up with the awards, and the level for fiscal year 1995 is up very significantly.

Expenditures in FY 1994 increased a modest 2.3 percent, to \$268.2 million. Research expenditures have been steadily increasing over the past ten years, with support from industry rising fastest. Corporations are depending more on universities for basic research, and they are also funding more research related to patents issued to faculty at universities. Of course, these companies want to invest their R&D funds in research by faculty who are leaders in their fields, so this

(Continued On Next Page)

Two Senior Licensing Associates Join ORTTA

Two new members of ORTTA's Patents and Technology Marketing staff will work to bring new technology into public use via patents and patent licenses: Michael F. Moore works to patent and market health technology; William Rosenberg works with mechanical, chemical, electrical, and biological technology (MCEB).

Previous assistant directors Jim Severson and Tony Strauss have been promoted: Severson is now director for health technologies; Strauss, director for MCEB. Both report to Tony Potami, associate vice president for research and technology transfer.

Senior licensing associate Michael F. Moore (*not* to be confused with Michael P. Moore, ORTTA's director of communications) comes to the University from Amersham Life Science, Inc. He marketed Amersham's nonradioactive products for protein studies, helped evaluate and introduce new technologies in the U.S. and U.K., managed an applications laboratory, and worked in the manufacture and safety of radioactive pharmaceutical products.

Moore earned an M.S. in biotechnology from the Illinois Institute of Technology in 1990, and a B.S. in biology, minor in chemistry, from Northern Illinois University in 1981. He worked for Amersham in Arlington Heights, Ill., from 1982 until joining ORTTA last month.

Senior licensing associate William S. Rosenberg, Ph.D., says he's had two careers: In the 1970s he helped the U.S. Environmental Protection Agency develop and implement

environmental regulations, then marketed environmental services for a private firm; in the 1980s, he marketed new microbial technologies for agriculture and environmental remediation, established and managed the U.S. subsidiary of a British biotech firm, Biotal, Inc., and provided licensing and acquisition services among clients in the U.S. and Europe.

Most recently, as a vice president of Intracel Corporation, Rosenberg worked on product development for immunoassays. That work included coordinating funding for a manufacturing facility in Israel, coordinating patent-

ing of an intracellular approach to HIV treatment, and licensing technologies for the detection of other infectious diseases.

Rosenberg received his Ph.D. in organic chemistry from Brandeis in 1969. He served a post-doctoral fellowship in Belgium, and has studied toward an M.B.A.



William Rosenberg, left, and Michael F. Moore

FY94 Activity

(Continued From Previous Page)

is another representation of the quality of our faculty. To achieve the critical goal of increasing research support measured by total sponsored funding, the University will most likely need to increase levels of industry and private funding to compensate for expected tightening of federal and state funding.

Our national ranking in terms of federal support for R&D activities is reported by the National Science Foundation. From a recent high of 11th in 1991, the University moved to 13th in 1992 and 1993, which is still above the historical baseline and the benchmark goal of remaining in the top 15 research universities. The University's ability to maintain its ranking in this area will be the best measure of our ability to recruit and retain high-quality faculty, because the competition for federal dollars is going to get even more intense as deficit reduction continues.

Technology Transfer

In the area of technology transfer, faculty continue to provide many excellent invention disclosures to ORTTA's Patents and Technology Marketing division. In FY 1994, collegiate units reported 134 inventions (disclosures), up from 122 in FY 1993. Patent activity was level, with 32 U.S. patents issued. ORTTA would like to see invention disclosures rise to around 175 per year.

Using patent reserve funds, ORTTA has added two staff members to enable the Patent and Technology Marketing division to better serve University inventors and to maximize the social and economic benefits of University technologies. The Blandin Foundation/Sota Tec Fund grant, which is in the third year of providing \$1 million for technology development, has increased ORTTA's ability to work with Minnesota companies and to support patenting and development of faculty inventions.

McKnight Land-Grant Professors, 1995-1997

The McKnight Land-Grant Professorship is a program of career development awards for junior faculty. The program was established in 1987 with a gift from the McKnight Foundation combined with a share of the Permanent University Fund (PUF). The program's name draws attention to a unique public-private partnership that enables the University to develop and retain fine scholars, thus building for its future. The goal of the program is to give a lift to the careers of our most promising junior scholars at a crucial period in their professional lives.

Each year in the fall, the Graduate School holds a competition in which each department may nominate its most promising assistant professor for this two-year endowed professorship award. The award consists of a \$20,000 research grant in each of the two years, and a year's leave in the second year to conduct research.

The nominations are reviewed by a selection committee composed of faculty from across the University. The current chair of the selection committee is Professor David Bernlohr, a McKnight Land-Grant Professor from the first class in 1987. The winners are chosen for their potential for important contributions to their fields; the degree to which their past achievements and current ideas demonstrate originality, imagination, and innovation; and the significance of the research and the clarity with which it is conveyed to the nonspecialist.

The nine junior faculty below have been selected for the 1995-97 awards. This brings to 85 the total number of recipients since 1987.

Prodromos Daoutidis, Chemical Engineering

Ph.D. University of Michigan

Professor Daoutidis's research aims at creating novel methods for controlling the behavior of chemical processes in order to increase their efficiency and reduce environmental pollution. The methods currently used in the chemical industry assume linear behavior, whereas the majority of processes in modern technologies (e.g., biotechnology) are characterized by a strongly nonlinear behavior. This research, therefore, seeks to develop a comprehensive theory for the control of nonlinear processes. Theoretical investigations are coupled with applications to high-purity distillation columns and chemical reactors. These applications document the potential of the theory to achieve effective control in traditional and emerging technologies.

Craig J. Forsyth, Chemistry

Ph.D. Cornell University

Professor Forsyth is developing new methods for the synthesis of organic chemical compounds and is studying some fundamental relationships between chemical structure and function at the interface of chemistry and biology. New synthetic methodology is being created for broad, general applications and to aid the construction of biologically important compounds. These synthetic compounds are being used in combination with chemical, physical, and biological techniques to study the phenomena of cancerous tumor growth and inhibition. Goals of this research are to enhance the general utility of chemical synthesis and to identify new therapeutically valuable chemicals and biochemical mechanisms.

Susan C. Mantell, Mechanical Engineering

Ph.D. Stanford University

Fiber-reinforced, polymer matrix composites are playing a significant role in putting the United States back in a dominant industrial position. These materials are critical components for weight-sensitive applications such as aircraft and automobiles. Although much progress has been made in recent years to improve materials and develop processes, composites have yet to attain a level that is competitive with traditional metals in terms of cost, process controllability, and reliability. Professor Mantell is investigating innovative sensing methods to detect defects during the manufacture of composites. This research provides the foundation for future work in automating composites manufacture. Advances in these areas are crucial to moving composites technology, initiated in the defense industry, to the commercial sector.

Shahid Naeem, Ecology, Evolution, and Behavior

Ph.D. University of California

Human expansion is dramatically reducing the diversity of plants, animals, and microbes in natural ecosystems the world over. The ecological consequences of this decline are unknown. Some theories predict no effects; others predict enormous effects, including alterations of global climatic conditions. Because biotic diversity is extraordinarily difficult to manipulate in natural ecosystems, Professor Naeem will use assemblages of microbial species as highly dy-

Graduate School News

dynamic laboratory models of ecosystems to explore how changing biodiversity affects the stability, resilience, and productivity of ecosystems. This research will provide some of the first direct tests of biodiversity theories.

Nikolaos Papanikolopoulos, Computer Science

Ph.D. Carnegie-Mellon University

Industrial robots currently lack the degree of flexibility necessary for their efficient and cost-effective use. Professor Papanikolopoulos's research introduces the Controlled Active Vision framework, which increases robot flexibility by integrating a vision sensor in the robot control scheme. Future research will extend the Controlled Active Vision framework to the challenging problems of depth/shape estimation, automatic target detection, and vision-based grasping of moving objects. Solving these problems will be a major step towards the development of intelligent robots.

Diana E. Richards, Political Science

Ph.D. Yale University

A theoretical difficulty common to many fields is the integration of theories and observations between different scales of analysis. Most fields have theories at the microscale and at the macroscale, but have difficulty connecting theories at different levels. In political science these connections are most evident in the subfield of social choice, where individual preferences are combined to yield a collective outcome. Professor Richards's research examines the aggregation from individual to group in terms of chaotic dynamics, framed by three aspects: (1) establishing that the micro-macro connection manifested in social choices exhibits chaos in its nonequilibrium cases, (2) understanding what causes the complexity in the micro-macro connection, and (3) explaining how stability is achieved in practice.

Carol K. Shield, Civil Engineering

Ph.D. University of Illinois

Economical repair and rehabilitation of the country's infrastructure is desperately needed. Advances in production techniques have lowered the cost of manufacturing composite beams, making composite materials a reasonable alternative to steel and concrete. However, before composites can become common in civil engineering applications, their mechanical response must be accurately modeled; in particular, there must be a complete understanding of their buckling be-

havior. Professor Shield's research focuses on developing methods for analyzing the buckling of composite beams. This research is a necessary precursor to creating a suitable design code for the use of composites in civil structures.

Marla Spivak, Entomology

Ph.D. University of Kansas

Professor Spivak's research focuses on a particular aspect of the social behavior of honey bees, that of hygienic or nest cleaning behavior. Because selected lines of hygienic bees demonstrate resistance to an economically important parasitic mite, research on the bees' behavior may contribute to sustainable beekeeping practices worldwide. The broad goal of this research is to understand the biological bases for the behavior by (1) investigating the cues hygienic bees use to detect mites in the nest, (2) addressing theoretical questions on the division of labor in social insects, and (3) imaging neurons in brains of hygienic bees for the neurotransmitter octopamine, an important activator of behaviors in animals.

John Watkins, English

Ph.D. Yale University

Professor Watkins's study marks the first comprehensive survey of poems, plays, sermons, speeches, biographies, and prose romances about Elizabeth I that were produced in England between her death in 1603 and the death of Queen Anne in 1714. Through literary and historiographical analysis of individual texts, the study explores how competing legends of Elizabeth functioned in seventeenth-century debates about education reform, religion, foreign diplomacy, the status of women, and other public issues. The research centers on Britain's heightened interest in Elizabeth at three points of political crisis: the Gunpowder Plot against James I (1605), the execution of Charles I (1649), and the forced abdication of James II (1688).

Conflict

{Continued From Page 1}

and educational policy; and by deans, vice presidents, provosts and chancellors. While there is not yet consensus on the entire policy, there is general agreement on a number of points. Please send your suggestions for improving the policy to Mark Brenner at the Graduate School, 420 Johnston, brenner@mailbox.mail.umn.edu, by March 23.

The authors invite comment on the title of the draft policy, "Policy on Conflict of Commitment." Some faculty members have recommended a more positive-sounding title, for example, "Policy Governing External Activities."

There is general consensus that the time available for extra professional activities should not exceed one day in seven. A person holding a 9-month *B* appointment may engage in extra professional activities up to 39 days per term of appointment; for 12-month *A* appointments, the limit is 48 days.

Engaging in extra professional activities for more than ten days per term of appointment requires approval from one's department head, says the draft policy. Some people argue that because extra activities are specifically permitted, they should not need prior approval. The counter argument is that department approval is necessary in order to protect departmental interests.

The draft policy defines extra professional activities of two kinds: those that might compete for employees' time and

those that might compete with University interests. Some activities do both. The draft policy requires departmental approval of extra professional activities that might compete with University interests.

Unlike the current consulting policy, the new policy classifies the following activities among the faculty's regular responsibilities: serving on editorial boards, review panels, or scholarly or professional boards; holding office in scholarly or professional organizations; attending professional meetings; and giving occasional public presentations. Those *are not extra* professional activities; time committed to them is *not* time spent outside normal faculty responsibilities.

Also unlike the current policy, the new policy says overload teaching within the University *is extra* professional activity; it does count towards the time allowed for extra activities. While most of the policy's authors and reviewers agree that overload teaching should count as an extra activity, considerable controversy exists regarding *how much* it should count: The current proposal says that one credit of overload teaching counts as three days of extra professional activity. An alternative would be to state some general guidelines and have department heads make determinations on a case-by-case basis.

Consulting for compensation is governed by both the present policy and the new draft, but the new policy governs a number of additional activities as well. Please see the Table on page 1.

The Academic Integrity Committee

Authors of the draft policy on conflict of commitment

Sandra Archibald, Humphrey Institute

Mark Brenner, Acting Vice President for Research and Acting Dean, Graduate School (committee chair)

Henry Buchwald, Surgery

Dennis Cabral, Academic Affairs

Bianca Conti-Tronconi, Biochemistry-CBS

Gary Gardner, Horticultural Science

Cherie Perlmutter, Health Sciences

Anton R. Potami, ORTTA

Mark Rotenberg, General Counsel

Paul Sackett, Industrial Relations Center

Donald Spring, English, UM Morris

Matt Tirrell, Chemical Engineering & Materials Science

Bill Donohue, General Counsel's Office (staff)

Tony Strauss, Patents & Technology Marketing (staff)

Karen Seashore Louis, College of Education, also helped develop the policy, but has since left the committee.

POLICY ON CONFLICT OF COMMITMENT
DRAFT - 2/17/95

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1. STATEMENT OF GENERAL POLICY

1.1 The primary responsibilities of ACADEMIC EMPLOYEES within the University are teaching and learning, scholarship (including research and artistic creation), and service to the University and to the wider community. Because of the capabilities of ACADEMIC EMPLOYEES, they are often sought to provide professional expertise for activities that are beyond the responsibilities of the employee's academic appointment. Engaging in these additional activities (referred to in this document as EXTRA PROFESSIONAL ACTIVITIES) should be encouraged since they often complement the ACADEMIC EMPLOYEE'S primary University responsibilities if time for them can be accommodated within the ACADEMIC EMPLOYEE'S term of appointment. However, an ACADEMIC EMPLOYEE may not engage in EXTRA PROFESSIONAL or BUSINESS activities even within the limitations set forth in this policy if the EXTRA PROFESSIONAL and BUSINESS activities interfere with his/her ability to complete his/her University teaching, research, and outreach responsibilities.

1.2 Since demands for the talent and expertise of ACADEMIC EMPLOYEES may on occasion affect their responsibilities to the University, guidelines are needed to regulate the response to these demands. In general, it is proper to restrict activities if they: 1) interfere with an ACADEMIC EMPLOYEE'S ability to carry out his/her responsibilities to the University; or 2) inappropriately use resources or facilities of the University.

1.3 The intent of this policy is to: 1) identify professional contributions and services rendered by ACADEMIC EMPLOYEES to the community; 2) establish mechanisms for assuring the accountability of the University and its ACADEMIC EMPLOYEES with respect to EXTRA PROFESSIONAL and BUSINESS activities; and 3) provide rules which attempt to reconcile, as equitably as possible, conflicts between EXTRA PROFESSIONAL and BUSINESS demands on ACADEMIC EMPLOYEES' time and their varied University responsibilities. This policy supersedes and replaces all prior policies on this subject.

2. CONFLICT OF COMMITMENT

2.1 A full-time ACADEMIC EMPLOYEE is expected to devote primary professional loyalty, time, and energy to University teaching, research, and outreach responsibilities, and where applicable to University patient care. Accordingly, all ACADEMIC EMPLOYEES should arrange all activities that are not part of their University responsibilities so as not to interfere with the primacy of these commitments. ACADEMIC EMPLOYEES may engage in EXTRA PROFESSIONAL and BUSINESS activities over and above their primary responsibility to the University. However, the amount of time spent on such activities must conform to the limitations set forth in this policy.

2.2 As indicated above, an ACADEMIC EMPLOYEE may not engage in EXTRA PROFESSIONAL or BUSINESS activities even within the limitations set forth in this policy if the EXTRA PROFESSIONAL and BUSINESS activities interfere with his/her ability to complete his/her University teaching, research, and outreach responsibilities.

2.3 For the purpose of this policy, there are two fundamental types of conflict of commitment: the first, activities that compete with time needed to carry out University responsibilities, and the second, activities that compete with the teaching, research, and outreach missions of the University.

51 **3. ACTIVITIES THAT ARE CONSIDERED PART OF UNIVERSITY RESPONSIBILITIES**
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53 3.1 The activities below (a-f) are considered service and are not considered against the time limitation
54 for EXTRA PROFESSIONAL and BUSINESS activities (see Section 6), they should not be pursued if they
55 interfere with agreed-upon teaching, research, and outreach activities. The specific amount of time
56 allocated for these activities should be agreed upon with the ACADEMIC EMPLOYEE's department head¹
57 at least once a year as part of the workload discussion. Before engaging in new activities that would
58 deviate substantially from the annual plan, the employee should discuss the activities with his/her
59 department head.

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- 61 a) An ACADEMIC EMPLOYEE serving as editorial officer or having other duties for a learned journal
62 of a scholarly or professional organization
 - 63 b) An ACADEMIC EMPLOYEE serving on review panels for academic, governmental, or not-for-profit
64 entities
 - 65 c) An ACADEMIC EMPLOYEE serving on a board of directors or advisory committee of a scholarly or
66 professional organization.
 - 67 d) An ACADEMIC EMPLOYEE serving as an officer of a scholarly or professional organization
 - 68 e) An ACADEMIC EMPLOYEE attending professional meetings or professional development programs.
 - 69 f) An ACADEMIC EMPLOYEE giving occasional public presentations or participating in colloquia
- 70

71 For purposes of this policy, work supported by grant or contract funds awarded to the University and
72 accepted by the Board of Regents does not constitute outside activity. For some units, community
73 contact and outreach are part of their University responsibilities and, therefore, are not considered an
74 EXTRA PROFESSIONAL ACTIVITY under the terms of this policy. All such activities will be governed
75 by departmental, collegiate, and other University policies.

76

77 **4. EXTRA PROFESSIONAL ACTIVITIES THAT DO NOT REQUIRE PRIOR APPROVAL BEFORE ACTIVITY**
78 **COMMENCES BUT MUST BE REPORTED ANNUALLY TO DEPARTMENT HEAD**

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80 **4.1 External and Internal Consulting**

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82 Engaging in any of the following activities if the total time involved is less than 10 days during the
83 term of appointment.

- 84
- 85 a) Consulting for business or governmental entities (this includes any combination of one or more
86 business governmental entities), or
 - 87
 - 88 b) Consulting for other units or providing services within the University for which there is overload
89 pay.
- 90

91 **5. EXTRA PROFESSIONAL OR BUSINESS COMMITMENTS THAT REQUIRE PRIOR APPROVAL**

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93 Some of the commitments listed are ones that compete for time allocatable for EXTRA PROFESSIONAL
94 ACTIVITIES (Noted as TIME). Others of the commitments listed below represent activities that may
95 compete with the missions of the University (Noted as COMPETITION). All Academic Employees
96 (appointments of 50% time or more) must obtain written approval before engaging in any activity that
97 is noted as one that might compete with the missions of the University. The amount of time for such

98 ¹ Department head is used as a generic term for the immediate administrator, which is normally the
99 department head, department chair, division head, or director.

100 activities should be arranged in advance, and if an ACADEMIC EMPLOYEE wishes to deviate substantially
101 from the prearranged number of days, he/she should seek approval for additional time.

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5.1 Board Memberships

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- a) An ACADEMIC EMPLOYEE serving as a corporate officer or on a board of directors of a BUSINESS (TIME & COMPETITION)

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5.2 Competing Business Activities

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- b) An ACADEMIC EMPLOYEE employed by or consulting for a BUSINESS related to his/her professional responsibilities that competes or has the potential to compete with services provided by the University that are part of the employee's University responsibilities. (TIME & COMPETITION)

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5.3 Research Activities

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- c) An ACADEMIC EMPLOYEE applying for, receiving, and conducting any sponsored research activities for another organization that ordinarily would be conducted under the auspices of the University. (COMPETITION)

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5.4 External and Internal Consulting

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- d) An ACADEMIC EMPLOYEE consulting for BUSINESS or governmental entities or for other units within the University for a total of 10 or more days during the TERM OF APPOINTMENT (this includes any combination of one or more BUSINESSES or governmental entities).² (TIME & COMPETITION)

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5.4.1 Instructional Activities

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- e) An ACADEMIC EMPLOYEE concurrently teaching for another higher educational institution during his/her TERM OF APPOINTMENT (TIME & COMPETITION)³ Each credit hour taught per quarter will be considered equivalent to four days of EXTRA PROFESSIONAL ACTIVITIES (see Section 6). (TIME)

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- f) An ACADEMIC EMPLOYEE teaching for Continuing Education and Extension for extra compensation during the TERM OF APPOINTMENT. Each credit hour taught per quarter will be considered equivalent to three days of EXTRA PROFESSIONAL ACTIVITIES (see Section 6). (TIME)

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- g) An ACADEMIC EMPLOYEE performing other teaching or teaching-related activities for the unit in which he/she holds an appointment or another unit within the University for extra compensation during the TERM OF APPOINTMENT. Each credit hour taught per quarter will be considered equivalent to three days of EXTRA PROFESSIONAL ACTIVITIES (see Section 6). (TIME)

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146 ² A single form specifying a range of time to be spent on related activities may be submitted.

147 ³ Participating for no extra compensation in a University collaborative instructional effort with another
148 organization will not be counted against the consulting time limit.

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5.5 Projects Administered by the University for Which There is Overload Pay

- h) An ACADEMIC EMPLOYEE participating in a University-sponsored project, e.g., an international project, for which there is overload pay.

Faculty or P&A staff on nine-month appointments may use these overload funds to fund a summer appointment, assuming they intend to work during this appointment. For those on A base appointments, the overload pay from the project may be deposited into a departmental account to be used to subsidize the faculty or academic staff member's travel, research assistant, or other professional development, but may not be used to provide overload compensation. If the work does not interfere with workload responsibilities, approval may be sought to consider it as consulting and have it count against the applicable 39- or 48-day limit. (TIME)

6. TIME LIMITATION FOR EXTRA PROFESSIONAL AND BUSINESS ACTIVITIES

6.1 ACADEMIC EMPLOYEES are permitted to engage in business activities unrelated to their professional expertise insofar as they do not interfere with the primacy of their University obligations.

6.2 EXTRA PROFESSIONAL and BUSINESS activities related to an ACADEMIC EMPLOYEE's professional responsibilities that are not part of the University duties of a full-time ACADEMIC EMPLOYEE must not exceed an average of one day per seven-day week for the TERM OF APPOINTMENT. For those with "B" appointments, this amounts to a maximum of 39 days in the TERM OF APPOINTMENT; for those with "A" appointments, this amounts to a maximum of 48 days in the 11 months of active service. A consulting day will be considered approximately 8-10 hours of consulting activities and preparation time regardless of when or where this occurs during the seven-day week. Preparation time and travel time devoted to the consulting activity is counted toward the consulting limit.

7. PART-TIME EMPLOYEES

7.1 ACADEMIC EMPLOYEES (100%) must comply with the time limitations specified within this policy. ACADEMIC EMPLOYEES who hold appointments greater than or equal to 67% time may conduct consulting activities in their non-university time without regard to the time limits contained in this policy, but must report all consulting activities as indicated in this policy; they may also request a proportionate amount of consulting time based upon their appointment percentage. ACADEMIC EMPLOYEES holding appointments less than 67% time may engage in EXTRA PROFESSIONAL ACTIVITIES only during their noncontractual time. Reporting requirements, however, apply to all Academic Employees with an appointment of 50% time or more.

7.2 All ACADEMIC EMPLOYEES holding appointments of 50% time or more and planning to participate in EXTRA PROFESSIONAL ACTIVITIES that have the potential to compete with the missions of the University must obtain permission before engaging in the activity unless specified under the terms of their appointment.

**Sections 8-12 apply to all ACADEMIC EMPLOYEES,
regardless of their terms of appointment.**

8. APPEARANCE BEFORE PUBLIC BODIES

8.1 Any ACADEMIC EMPLOYEE who testifies either in person or by way of a written communication, before any public body or public official, regarding any issue or matter up for consideration, discussion, or action, and who is identified as a University employee, must make known clearly, completely, and

policy, 2/17, p. 4

200 candidly whether he or she is, or is not, speaking on the matter as a representative of the University.
201 Where the individual is not speaking for the University, the individual must either indicate that he or
202 she is speaking for himself or herself or, if appropriate, identify the sponsoring individual corporation,
203 or organization that is supporting or has supported the studies relevant to the testimony, or under whose
204 auspices the individual is appearing or sending the communication. The individual must also explain
205 the conditions of the association with the sponsor.
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207 9. USE OF THE UNIVERSITY NAME

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209 9.1 No ACADEMIC EMPLOYEE may use the University name for advertising purposes. An ACADEMIC
210 EMPLOYEE engaging in outside activity may identify his or her association with the University, but must
211 take care that the name of the University is not used in any way that implies endorsement or approval
212 of the activity.
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214 10. USE OF THE OFFICIAL STATIONERY OR OF THE UNIVERSITY ADDRESS

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216 10.1 No ACADEMIC EMPLOYEE may use the official stationery of the University, or give as a
217 BUSINESS address any building or unit of the institution in connection with: 1) outside nonprofessional
218 activities, or 2) outside professional activities engaged in primarily for private purposes.
219

220 11. USE OF UNIVERSITY FACILITIES

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222 11.1 No ACADEMIC EMPLOYEE may use University equipment or services for activities not in
223 performance of one's University responsibilities in a way that significantly depletes University resources
224 without first obtaining approval (B.A. Form 39, Request for Permit for Outside Work) for and arranging
225 for payment of a reasonable fee for such services with the University administration. Use of certain
226 University equipment or services may not require prior approval when it is understood that such
227 equipment or services are generally available to ACADEMIC EMPLOYEES for the payment of a reasonable
228 fee.
229

230 12. HOLDING PUBLIC OFFICE

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232 12.1 ACADEMIC EMPLOYEES share with their fellow citizens the right to campaign for and to hold
233 public office without their employer's prior approval. It is desirable, however, that any ACADEMIC
234 EMPLOYEE contemplating candidacy for elective political office or appointment to public office where
235 the duties of a campaign or the holding of the office would interfere with the fulfillment of University
236 responsibilities, consult in advance with the appropriate collegiate and administrative units of the
237 University. Consultation should focus on the question of whether or not temporary suspension of some
238 portion of the ACADEMIC EMPLOYEE's responsibilities can be accommodated without serious
239 impairment of the function of the department or unit involved.
240

241 12.2 When an ACADEMIC EMPLOYEE is appointed to or elected to public office, e.g., to the state
242 legislature, requiring absence from University duties for continuous periods of time of one year or less,
243 it is anticipated that leave of absence procedures or other appropriate arrangements such as a special
244 contract or a reduced teaching load with a commensurate adjustment in salary, for the year or portions
245 thereof, will be invoked. The ACADEMIC EMPLOYEE must provide to the unit administrator as much
246 notice as possible to insure that ample time will be provided the unit to replace or otherwise arrange
247 to meet the absent ACADEMIC EMPLOYEE's responsibilities. Prior approval by the Board of Regents
248 continues to be required for any full or partial leave of absence.
249

policy, 2/17, p. 5

250 12.3 When an ACADEMIC EMPLOYEE is appointed to or elected to public office requiring continuous
251 full-time service for a specified period of more than two years, it is expected that the individual will
252 resign from the University position after such election or appointment.
253

254 When an ACADEMIC EMPLOYEE's re-election or reappointment to public office causes continuous
255 absence to exceed two years, it is expected that the individual will resign from the University position
256 after such re-election or reappointment.
257

258 In the case of appointments for an indeterminate period of time, full or partial leaves of absence may
259 be negotiated annually, or if requests for leave extend beyond reasonable limits, resignation may be
260 expected.
261

262 12.4 The purpose of this section of the policy is to balance public service of University ACADEMIC
263 EMPLOYEES with the University's primary obligations to maintain its teaching programs and foster
264 research and creative activity. At the same time, it seeks to encourage public service, including the
265 holding of public office and, in any case, not to interfere with ACADEMIC EMPLOYEES' right freely to
266 participate in the political process.
267

268 **Implementation - Conflict of Commitment** 269 **Reporting Requirements**

270 13. **PRIOR APPROVAL**

271 13.1 Prior approval of the department head must be secured for those activities specified as
272 requiring such approval. The ACADEMIC EMPLOYEE contemplating such activity must initiate the
273 request for approval. The ACADEMIC EMPLOYEE contemplating such activity must initiate the
274 request for approval.
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277 13.2 The request form for approval must include the following information: name of ACADEMIC
278 EMPLOYEE; name of entity for which activity will be performed; type of activity involved; period of
279 time during which such activity is to be performed; estimated amount and distribution of time, in days
280 or fractions thereof, to be spent on the activity; whether or not this activity will be compensated (a
281 "compensated" activity is one for which honoraria, fees, or other benefits over and above expenses are
282 received; reimbursement for expenses is not to be construed as compensation); and signature and date.
283 The department head may require the ACADEMIC EMPLOYEE to submit additional information about the
284 activity.
285

286 13.3 The request for approval must be submitted to the department head. The department head
287 must approve or deny the request within a reasonable period of time. If the request is denied, the
288 ACADEMIC EMPLOYEE may request review by the collegiate dean or vice chancellor for academic
289 affairs. The decision of collegiate dean or vice chancellor for academic affairs shall be final.
290

291 14. **ANNUAL REPORTING**

292 14.1 All ACADEMIC EMPLOYEES with appointment of 50% time or more must report to their
293 department head on an annual basis those activities that occurred during the previous year specified in
294 Sections 4 and 5 as requiring such reporting.
295

296 a) Annual reports on appropriate forms must be filed with the department head who will keep them
297 for at least five years. Copies of these annual reports must be forwarded to the dean or vice
298 chancellor for academic affairs. The department head must also include a statement of the number
299

300 of denials occurring at that administrative level and the reasons therefor; the statement may identify
301 activities by individual.

302

303 b) The dean or vice chancellor must submit these annual reports and statement about denials to the
304 appropriate provost or chancellor and to the Senior Vice President for Academic Affairs. The dean
305 or vice chancellor must also include a statement of the number of denials occurring at that
306 administrative level and the reasons therefor.

307

308 c) The Senior Vice President for Academic Affairs or chancellor will maintain these records and will
309 make this information public in manners consistent with University procedures, giving proper
310 attention to rights of privacy of individual ACADEMIC EMPLOYEES.

311

312 d) The Senior Vice President for Academic Affairs or chancellor will present to the Board of Regents
313 quarterly aggregate summaries of noncampus service requests, with the certification that all
314 requests have been examined and conform to regents' and appropriate administrative policies
315 relating to noncampus service, professional and consulting activities.

316

317 15. PROCEDURES FOR MONITORING

318

319 15.1 The appropriate provost or chancellor, in cooperation with the appropriate dean, will
320 periodically review a random sample of individual and unit reports in order to evaluate the approval
321 and reporting systems, and will make recommendations regarding the effectiveness of this policy to the
322 president.

323

324 16. COMPLIANCE

325

326 16.1 The University expects ACADEMIC EMPLOYEES to comply fully and promptly with all the
327 requirements of this policy. Breaches of this policy include, but are not limited to, failing to secure
328 prior approval for those activities that require it, intentionally filing an incomplete, erroneous, or
329 misleading request for approval or annual report, failing to obtain department head's approval to
330 participate in service activities as part of the workload, or failing to provide additional information as
331 required by the approving authority. A violation of this policy may be the basis for discipline of an
332 ACADEMIC EMPLOYEE. If sanctions are necessary, they will be imposed in accordance with the
333 Regulations Concerning Faculty Tenure and the Academic Professional and Administrative Staff
334 Policies and Procedures. The potential sanctions may include, but are not limited to, the following:

335

- 336 * Letter of admonition;
- 337 * Ineligibility of the ACADEMIC EMPLOYEE for EXTRA PROFESSIONAL and BUSINESS activities;
- 338 * Suspension;
- 339 * Nonrenewal of appointment;
- 340 * Dismissal.

341

342 17. APPENDIX A - OPERATING DEFINITIONS

343

344 17.1 ACADEMIC EMPLOYEE means any person possessing either a full-time (any employee holding
345 an appointment of more than 66 percent time) or part-time academic or staff appointment at the
346 University and includes all persons with the following class numbers: Academic Administrative 93xx;
347 Faculty 94xx; Minnesota Extension Service 96xx; and Academic Professionals 97xx. Also included
348 in this category are those individuals, whether salaried or not salaried, who on behalf of the University
349 are responsible for writing and submitting grants. [Add other categories]

350

351 17.2 BUSINESS means any corporation, partnership, sole proprietorship, firm, franchise, association,
352 organization, holding company, joint stock company, receivership, BUSINESS or real estate trust, or any
353 other nongovernmental legal entity organized for profit, not-for-profit, or charitable purposes.
354

355 17.3 EXTRA PROFESSIONAL ACTIVITY means an activity (beyond University duties) of a nature
356 requiring the special training, expertise, and/or certification that qualifies the Academic Employee for
357 the particular University appointment.
358

359 For certain ACADEMIC EMPLOYEES, the distinction between involvement in community activities as a
360 citizen and involvement in such activities as a professional is difficult to determine. If community
361 activities are citizen-related rather than professional activities, they may be exempt from the prior
362 approval and reporting requirements of this policy. ACADEMIC EMPLOYEES holding elected positions
363 must comply with section 12 of this policy.
364

365 17.4 OVERLOAD INTERNAL COMMITMENT means any activity that an ACADEMIC EMPLOYEE engages
366 in during the term of his/her appointment that generates compensation in addition to the annual salary
367 published in the Notice of Appointment. OVERLOAD INTERNAL COMMITMENT includes CEE courses
368 taught on an overload basis; all other forms of teaching or course development not considered part of
369 one's departmentally-approved workload, presentations or speeches leading to honoraria; international
370 projects; or services such as consultation performed for other departments/units. It does not include
371 augmentations associated with an administrative role or title (e.g., augmentation for serving as
372 department chair), nor does it include summer teaching or other summer assignments engaged in at the
373 University that are separate from the nine-month ACADEMIC EMPLOYEE contract.
374

375 17.5 TERM OF APPOINTMENT is the contract period for Academic Employees during University
376 calendar year (July 1 to June 30). For those with academic year appointments ("B appointment"), this
377 is a nine-month appointment (39 weeks with no vacation period). ACADEMIC EMPLOYEES with "A"
378 appointments have an eleven-month appointment (48 weeks plus 22 vacation days in a calendar year).
379

380 18. ADMINISTRATIVE REVIEW

381
382 Reasons for limiting or denying approval for an activity would be if it is determined the activity
383 competes with the University or that carrying out the activity would interfere with completing workload
384 agreements.
385

386 Department heads will determine the amount of Extra Professional time to be calculated for overload
387 teaching, whether external or internal. As a general guide, for teaching in other higher education
388 institutions outside the University, one credit should be equivalent to four days of Extra Professional
389 Activities. For internal teaching, it should be considered for three days of Extra Professional Activity
390 per credit; however, the amount may be adjusted in recognition of the actual effort required to fulfill
391 these extra teaching responsibilities.

Law Says Don't Lobby Congress on Federal Dime

The Council on Governmental Relations (COGR), an organization of research universities, recently reminded its members not to lobby federal legislators on federal time. The reminder was prompted by a January memo from the director of NOAA; it instructed directors of Sea Grant programs that it is against the law to spend federal award money to lobby Congress for awards.

"No federal funds are to be spent on lobbying of any kind," David Duane and Michael Nelson instructed Sea Grant directors on January 12. Duane is director of the National Oceanic and Atmospheric Administration (NOAA), parent agency of Sea Grant; Nelson is NOAA's chief of grants management. "Any person who makes a prohibited expenditure is subject to a fine of not less than \$10,000," they wrote. "Failure to submit the disclosure form, when required, can result in the same penalty."

"If recipients of federal funds engage in lobbying, they must use their own money and submit disclosures of lobbying activities," wrote Kate Phillips, COGR's assistant executive director, when she distributed the NOAA memo to COGR members. Phillips added that the present concern about lobbying is the result of general anxiety about federal budgets, not any particular incident.

Permanent employees of an awardee institution need not register as lobbyists when they lobby on other-than-federal funds, however. According to Fred Bentley, ORTTA's director of research administration, University employees who have been in permanent positions for 130 days are exempt from the registering requirements, which are chiefly directed at professional lobbyists.

The University's federal relations officer, Tom Etten, commented on the matter by reminding faculty that it is his responsibility to lobby Congress on their behalf and to help them during their visits to, and other communications with, the Minnesota delegation to Congress.

The federal regulations say that federal award money, including grants and contracts, may not go to pay someone to influence Congress or a federal agency with regard to the making of federal awards. If an applicant or awardee uses money from some other source to lobby Congress, the applicant or awardee must submit a "Disclosure of Lobbying Activities" (OMB Standard Form LLL) to the funding agency.

The fine print allows exceptions for awards not exceeding \$100,000; for "agency and legislative liaison activities;" for various other activities related to award administration; for lobbying not directly related to any award; and for national defense.

For advice regarding whether and how the prohibition applies, principal investigators should please call Bentley, 626-2265, fred@ortta.umn.edu.

The government-wide prohibitions against lobbying by awardees appear in Title 48 of the *Code of Federal Regulations*, the *Federal Acquisition Regulations* (48 CFR 3.8, 52.203-11, 52.203-12).

The regulations derive from the so-called "Byrd Amendment," which Senator Robert Byrd added to an appropriation for the Department of Interior in 1989 (Public Law 101-121, see also 31 U.S. Codes 1352).

By Phil Norcross

Top 10 Institutions in Total Research-and-Development Spending Federal Fiscal Year 1993

	Federal funds for research & development		Total funds for research & development *	
	Amount	Rank	Amount	Rank
Johns Hopkins University **	\$ 673,601,000	1	\$ 745,515,000	1
University of Michigan	249,951,000	5	425,868,000	2
University of Wisconsin, Madison	213,955,000	7	372,362,000	3
Massachusetts Institute of Technology	267,414,000	3	365,553,000	4
University of Washington	268,819,000	2	335,329,000	5
University of Minnesota	174,716,000	13	332,033,000	6
Texas A&M University	122,533,000	27	322,691,000	7
University of California, San Francisco	210,148,000	8	314,599,000	8
Cornell University	195,229,000	9	310,949,000	9
University of California, San Diego	243,149,000	6	307,051,000	10

* The category of total funds includes amounts from federal and state governments, industry, the institution itself, and other sources. The figures cover only research-and-development expenditures in science and engineering and exclude spending in such disciplines as the arts, education, the humanities, and law.

** Includes the Applied Physics Laboratory with \$431 million in federal and \$447 million in total research-and-development funds.

Source: National Science Foundation

Undergraduate Research Opportunities

The University's Undergraduate Research Opportunities Program (UROP) funds research, scholarship, and creative projects by undergraduates in collaboration with faculty.

A UROP student may receive up to \$800 in stipend and/or up to \$250 for supplies and expenses.

To be eligible, students must be full-time undergraduates in good academic standing who will have fewer than 216 credits at the time their UROP projects are finished. The credit limit has variations, however, for students in architecture, landscape architecture, dentistry, pharmacy, and veterinary medicine. To receive a UROP stipend, a student must be eligible for University student employment or College Work Study. Students cannot receive both academic credit and a UROP stipend for a single body of work.

Any faculty member in the University may sponsor a UROP student. Faculty sponsors are responsible for overseeing UROP students' work and its timely completion. Sponsors are encouraged to combine other funds with a UROP award in order to support students and have their assistance with research projects.

UROP awardees present their work in an annual Undergraduate Research Fair in Coffman Union. The most recent fair was February 15.

For UROP projects running July 1995 to June 1996, the application deadline is **April 10, 1995**. For projects from January to June 1996, the deadline is in **late October**. An application includes UROP application forms, a proposal and budget by the student, a recommendation from a faculty sponsor, and a current student transcript. Applications are judged on the quality of projects and the educational benefits to students. Awards are made within eight weeks of the application deadline. Application materials are available from local UROP coordinators, as listed below.

Crookston UROP Coordinator:

Rita Meyer

Morris UROP Coordinators:

Edith Farrell, Sharon Van Eps

Duluth UROP Coordinators:

cross-college, Stephen Hedman
Business & Economics, Duane Kaas
Education & Human Service, Ed Lundstrom
Fine Arts, Arden Weaver
Liberal Arts, Jane Ollenburger
Science & Engineering, Tim Holst

Twin Cities UROP Coordinators:

Agriculture, Jean Underwood
Architecture & Landscape Architecture, Roger Clemence
Biological Sciences, Kathleen Peterson
Carlson School of Management, Michelle Grosz
cross-college, Phil Wagner
Dentistry, Robert Ophaug
Education, Carol Boyer
General College, Marjorie Cowmeadow
Human Ecology, Kate Maple
Institute of Technology, Russell Hobbie
Liberal Arts, Karen Murray
Medical School, Karen Karni
Natural Resources, John Bell
Nursing, Marilee Miller
Pharmacy, Robert Cipolle
University College, Phil Wagner
Veterinary Medicine, Victor Perman



Jennifer Stromer-Galley, student of speech communication, at UROP's Undergraduate Research Fair last month. Her poster describes the political work of U.S. first ladies Dolley Payne Madison and Sarah Childress Polk. Madison and Polk were criticized in private, but not in public, for assuming public roles. "Unlike Hillary Rodham Clinton," Stromer-Galley points out.

■ National Science Foundation

Global Change Research Program: Methods and Models for Integrated Assessment

Methods and Models for Integrated Assessment (MMIA) is a new funding opportunity for global change research at the National Science Foundation. The goal of MMIA is to support methodological research that will advance the design and conduct of integrated assessments. Integrated assessment is a new approach for examining the complex interactions among Earth's physical, biological, and human systems.

Assessing the combined influence of multiple systems is central to understanding important issues such as global environmental change, large-scale technological change, and international socio-political evolution. The integrated assessment approach involves the use of quantitative models and other methods to better understand individual component systems and their interactions, with particular emphasis on how changes in one or more component systems will impact other systems.

Federal agencies participating in the U.S. Global Change Research Program have identified integrated assessment as an important approach for providing information to policy and decision makers. In addition to providing information about the dynamics of change, integrated assessment will assist policy makers by providing a framework for identifying and evaluating likely consequences of different environmental policies.

In concert with other agencies, NSF has established MMIA to sponsor high-quality fundamental and methodological research in two categories: 1) research that advances the development of methodologies and models that will integrate multiple component systems; and 2) research that develops and enhances the scientific components of the integrated approach.

The application deadline for the first category is **April 17, 1995**. Research in the second category will be supported through disciplinary and interdisciplinary awards made by individual NSF programs and deadlines will vary by program.

NSF expects to make up to 30 MMIA awards in FY95 with total support for MMIA at approximately \$3.4 million.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. A complete list of agency contacts is available in the announcement.

■ U.S. Geological Survey

National Earthquake Hazards Reduction Program

Applications are invited by the U.S. Geological Survey for research projects under the National Earthquake Hazards Reduction Program (NEHRP) for FY95.

NEHRP supports research related to the following general areas of interest:

1. Understanding the earthquake source
Determining the physical properties and mechanical behavior of active crustal fault zones and their surroundings and developing quantitative models of the physics of earthquake processes.
2. Evaluating earthquake potential
Determining the geological and geophysical setting and characteristics of seismically active regions; determining the occurrence, distribution and source properties of earthquakes, and relating seismicity to geological structures and tectonic processes; determining the nature and rates of crustal deformation; characterizing the earthquake potential of the U.S. on a regional and national basis; identifying active faults, defining their geometry and determining the characteristics and dates of past earthquakes; conducting research to facilitate long-term probabilistic forecasts of the likelihood of large earthquakes on active faults; conducting intensified monitoring experiments in selected regions of high seismic potential; and developing and evaluating short- and intermediate-term earthquake prediction methods.
3. Predicting the effects of earthquakes
Acquiring data needed for the prediction of ground shaking, ground failure, and response of engineered structures; predicting ground failure at local and regional scales; and evaluating earthquake risk and losses.
4. Applying and utilizing research results
Applying of research results; transferring hazards and risk information and assessment methods to users.

The application deadline is **April 3, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact John Sims, Office of Earthquakes, Volcanoes, and Engineering, U.S. Geological Survey, Mail Stop 905, 12201 Sunrise Valley Drive, Reston, VA 22092; 703/648-6722. Refer to announcement number 8117.

■ HRSA

Maternal and Child Health Bureau

Research and Training Grants

The Maternal and Child Health Bureau, Health Resources and Services Administration, announces that FY95 funds are available for Maternal and Child Health (MCH) Special Projects of Regional and National Significance (SPRANS). MCH research and training grants improve the health status of mothers and children through 1) development and dissemination of new knowledge; 2) demonstration of new or improved ways of delivering care or otherwise enhancing Title V program capacity to provide or assure provision of appropriate services; and 3) preparation of personnel in MCH-relevant specialties.

Grants will be awarded in the following categories:

1. Research

To encourage research in maternal and child health which has the potential for ready transfer of findings to health care delivery programs. Special consideration will be given to projects which address the factors and processes that lead to disparities in health status and use of services among minority and other disadvantaged groups as well as health promoting behaviors, quality outcome measures, and systems integration/reform. \$1 million will be awarded to fund up to eight new awards for up to five years. Deadline for cycle 1 is **March 1, 1995**, and for Cycle 2, **August 1, 1995**. Contact Gontran Lamberty, 301/443-2190.

2. Long-Term Training

2.1 Pediatric Pulmonary Centers

Grants are to support the development, enhancement or improvement of community-based care for children with chronic respiratory diseases and their families in a wide geographic area by providing interdisciplinary training of a range of professional personnel and by working with state and local health agencies and providers—public, private or voluntary. The centers are expected to be models of excellence in training, service and research related to chronic respiratory diseases in infants and children. \$1.5 million will be awarded to fund up to six grants for up to five years. The deadline is **April 3, 1995**. Contact Elizabeth Brannon, 301/443-2190.

2.2 Neurodevelopmental Disabilities

Grants are to support and strengthen MCH programs through long-term training of a wide range of health professionals at the graduate and post-graduate levels, with a special focus on family-centered, community-based care. \$18 million will be awarded to fund up to 30 grants for up to five years. The deadline is **April 3, 1995**. Contact Elizabeth Brannon, 301/443-2190.

3. Continuing Education

Grants are to support and strengthen MCH programs and improve MCH systems or care through short-term, non-degree related training of health professionals and others providing health and related services for mothers and children including workshops, seminars, institutes, and other related activities intended to develop or improve standards, practices, curriculum or delivery of health care for the MCH population. \$400,000 will be awarded to fund up to eight awards for one to three years. The deadline is **July 3, 1995**. Contact Stephanie Bryn, 301/443-2190.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ USDA

National Needs Graduate Fellowships

The United States Department of Agriculture (USDA) will award competitive grants to colleges and universities for doctoral fellowships to meet national needs for the development of professional and scientific expertise in the food and agricultural sciences.

Food and agricultural sciences areas appropriate for fellowship applications are those in which shortages of expertise have been determined and targeted. In FY95, only the doctoral level of study will be supported. Six national needs areas are supported on a rotating basis of three needs areas per fiscal year. The targeted national needs areas to be supported in FY95 are plant biotechnology; engineering (food, forest, biological or agricultural); and water science.

A proposal may request funding in only one national needs area. A proposal may request a minimum of two fellowships and a maximum of four fellowships in the national needs area for which funding is requested. No limitation is placed on the number of proposals an institution may submit; however, the

{Next Page}

same college or equivalent administrative unit within an institution may submit a maximum of three proposals, one in each of the three national needs areas supported.

Total funds awarded to an institution shall not exceed \$324,000. \$54,000 will be received for each doctoral fellowship awarded. Total program funds available may not be evenly divisible by \$54,000; therefore, one fellowship may be supported on a partial basis with a lesser amount of funds. Available funding will support approximately 63 doctoral fellows through seven to ten grants in each of the three targeted areas.

The application deadline is **April 14, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Dr. William Jay Jackman, Higher Education Programs, CSREES, USDA; 202/401-1790; fax 202/401-1770; internet jjackman@morrell.esusda.gov.

■ EPA

Reducing Uncertainty in Risk Assessment and Improving Risk Reduction Approaches

The U.S. Environmental Protection Agency (EPA) invites research grant applications in four areas of special interest to its mission:

- Human health risk assessment

EPA uses health risk assessments to establish exposure limits and set priorities for regulatory activities. However, EPA is hampered by gaps in methods, models, and data needed to support risk assessments. In many cases default assumptions are used to extrapolate from animals to humans, from high to low doses, from acute to chronic exposures, and from lowest-effect levels to no-effect levels. A major research goal is to reduce reliance on such assumptions by obtaining biologically and physiologically based predictive models that will provide new concepts, data, and methods that can replace such default assumptions.

- Indoor air quality in large office buildings

An important aspect of this research is improving the scientific understanding of, and reducing the uncertainties surrounding, the relationships among indoor air quality, human exposures, and large building design and operation. Of interest are cross-sectional and/or longitudinal studies of large office buildings in relatively large geographical regions across the U.S.

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- Air pollutants (particulate matter, tropospheric ozone, toxics)

Certain widespread air pollutants continue to pose serious public health risks for susceptible members of the U.S. population or risks to sensitive ecosystems. The Clean Air Act requires that EPA establish and periodically review and revise appropriate criteria and air quality standards for such pollutants.

- Regional hydrological vulnerability to global climate change

Understanding regional vulnerability to climate change is critically dependent on understanding how wide-spread climate change affects the hydrologic watershed at scales where water resources and related ecologic, economic, and socio-political impacts are manifested. In order to make informed decisions concerning the risks of global change, the public and policymakers need a better understanding of the hydrologic vulnerabilities of regional systems. This, in turn, requires improved methodologies that identify and quantify physical and economic regional vulnerabilities to competing hydrologic demands, under current climate patterns and under projected climate change scenarios.

The mission of the EPA—and its unique role—is the joint protection of environmental quality and human health through effective regulations and other policy decisions. Achievement of this mission requires the application of sound science to the assessment of environmental problems and evaluation of solutions. Moreover, a significant challenge is to support long-term research that anticipates future environmental problems and strives to fill significant gaps in knowledge relevant to meeting regulatory goals.

Proposed projects must be designed to advance the state of knowledge in the indicated areas of environmental science and technology. Applications *will not* be accepted for routine monitoring, state-of-the-art or market surveys, literature reviews, development or commercialization of proven concepts, or for the preparation of materials and documents, including process designs or instruction manuals.

The application deadline is **April 17, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the U.S. Environmental Protection Agency, Office of Exploratory Research (8703), 401 M Street SW, Washington, DC 20460; 202/260-7474, fax 202/260-0211.

■ American Cancer Society Institutional Research Grant

The American Cancer Society (ACS), through the University Deans' Committee for the ACS Institutional Research Grant, announces the availability of individual Institutional Research Grants.

The stated goal of the American Cancer Society is to "foster meritorious research on cancer that cannot be supported through other available types of support." The purpose of the University of Minnesota Institutional Research Grant is to serve as "seed" money to permit the initiation of promising new projects or novel ideas by junior faculty investigators.

The amount of the individual award is \$15,000 in direct costs. Eligible applicants must be faculty members at the level of assistant professor or instructor and must not have received a prior ACS Institutional Research Grant nor have a current competitive national research grant. (Recipients of career development awards from NIH—K04, K08—or ACS junior faculty awards, or awards from the Leukemia Society are, however, eligible.)

Grants are available to anyone engaged in cancer-related research at the University of Minnesota who meets the above criteria. Cancer-related research includes analysis of developmental biology, gene regulation, or alteration of intracellular or extracellular processes which may lead to an improved understanding and/or therapy of potential or actual oncogenic events in prokaryotic or eukaryotic cells.

The application deadline is **April 1, 1995**. Instructions and application forms are available from the Pediatric Oncology Office, 421 Masonic Cancer Center, 626-1926.

■ NASA

Ground-Based and Small-Payloads Life Science Research

The National Aeronautics and Space Administration is seeking proposals for ground-based research and small-payloads in-flight research in life and biomedical sciences.

Program areas include space biology (includes cell and molecular biology, developmental biology, plant biology and systems biology); space physiology and countermeasures (includes cardiopulmonary studies, research on musculoskeletal and connective tissues, neuroscience and other areas such as integrated physiology); environmental health; space radiation health (includes radiation biology and risk assessment standards); space-human factors (includes man-machine function allocation); advanced life support

(includes air revitalization, water reclamation and waste management); advanced extravehicular activity systems (includes system requirements such as physiological and medical requirements); advanced technology development (emphasizes sensor technology for environmental health); and data analysis (priorities include extended data analysis and special data analysis techniques).

Applicants may propose studies for ground-based research and/or small-payloads flight experiments. NASA is especially interested in experiments aiming at space station utilization, proposals to enhance NIH-funded and NSF-supported research, and studies to advance practical applications of technology.

It is estimated that 50 awards will be made ranging from \$25,000 to \$250,000.

A letter of intent is required by **March 24**; final proposals are due **April 21, 1995**. For further information contact Life and Biomedical Sciences and Applications Division, Code UL, National Aeronautics and Space Administration, 300 E Street SW, Washington, DC 20024-3210; 202/358-2530. Refer to NRA 95-OLMSA-01.

■ NIST

Advanced Technology Program: Four Focused Programs

The National Institute of Standards and Technology (NIST) Advanced Technology Program (ATP) has announced the 1995 competitions for four of its eleven current focused program areas. The competitions and their proposal submission deadlines are:

Motor Vehicle Manufacturing Technology	April 11
Advanced Vapor Compression Refrigeration Systems	April 19
Catalysis and Biocatalysis Technologies	April 26
Materials Processing for Heavy Manufacturing	May 3

The ATP forms partnerships with companies or joint ventures to cost-share the preproduct development of promising but high-risk enabling technologies. It does not fund product development.

The ATP holds general (open to project proposals from any area of technology) and focused (open only to project proposals relevant to the industry-defined program topic) competitions each year. Details of the latest competitions were published in the February 2, 1995, issue of *Commerce Business Daily* and are available (along with proposal kits) from the ATP office. Call 800/ATP-FUND (287-3863), send e-mail to atp@micf.nist.gov, or contact Michael Baum, 301/975-2763, baum@micf.nist.gov.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary		
	Number	Amount
Proposals Submitted		
January 1995	437	\$ 72,953,973
Awards Processed		
January 1995	277	27,964,249
Proposals Submitted		
July 1994 - January 1995	2,432	386,850,505
Awards Processed		
July 1994 - January 1995	2,577	278,840,414
Proposals Submitted		
July 1993 - January 1994	2,427	336,823,777
Awards Processed		
July 1993 - January 1994	1,792	155,561,784

High-Resolution Paleoclimatic Studies: Lake Turkana, Kenya

Thomas Johnson, Geology, Duluth
 USDoC, NOAA
 \$77,540 - 11/01/94-10/31/95

Combustion Appliances and Indoor Air Quality

David Grimsrud, Graduate School
 Gas Research Institute
 \$81,646 - 09/01/94-05/31/95

Effectiveness of Assisted Living in Oregon: A Social Model of Residential Care for Chronically Ill People

Rosalie A. Kane, Institute for Health Services Research
 Robert Wood Johnson Foundation
 \$521,697 - 01/01/95-06/30/97

Minnesota Technical Assistance Program

Fay M. Thompson, Environmental Health and Safety
 Robert Lundquist, Environmental Health and Safety
 St of MN, Office of Environmental Assistance
 \$976,420 - 01/01/95-01/01/96

Colon-Neoplasia, Cell Proliferation and Diet

Patricia Grambsch, Biostatistics
 Wake Forest University
 \$89,996 - 09/15/94-08/31/95

Absorption of Retinoids from the Gastrointestinal Tract

Cheryl L. Zimmerman, Pharmaceutics
 Timothy S. Wiedmann, Pharmaceutics
 NIH, NCI
 \$134,666 - 01/01/95-12/31/95

Impact of Youth Development on American Indian Health

Linda Bearinger, Nursing
 Sandra J. Pothoff, Health Management and Policy
 Marcia Shew, Pediatrics
 NIH, NINR
 \$337,376 - 02/01/95-01/31/96

Regulation of E-Selectin During Acute Inflammation

Kevin Billups, Urologic Surgery
 NIH, NIDDK
 \$89,823 - 01/01/95-12/31/95

Dedicated Very-Large-Scale Integrated (VLSI) Digital Signal and Image Processors

Keshab K. Parhi, Electrical Engineering
 National Science Foundation
 \$62,500 - 09/01/94-02/29/96

Newborn Iron Deficiency in Infants of Diabetic Mothers

Michael Georgieff, Pediatrics
 Susan A. Berry, Pediatrics
 Charles A. Nelson, Institute of Child Development
 NIH, NICHD
 \$102,097 - 12/01/94-11/30/95

Regulation of Hepatocellular Function by Growth Hormone

Susan A. Berry, Pediatrics
 Howard C. Towle, Biochemistry (Med)
 NIH, NIDDK
 \$169,750 - 01/01/95-11/30/95

Youth and AIDS Projects (YAP)

Gary Remafedi, Pediatrics
 St of MN, Department of Health
 \$181,958 - 01/01/95-12/31/95

Visualization of Functional Connectivity in the Brain

David Rottenberg, Neurology
 Stephen C. Strother, Radiology
 NIH, NIDA
 \$148,414 - 09/30/94-08/31/95

Functional Reorganization within Motor Cortical Areas Associated with Recovery of Motor Function Following Stroke

James Ashe, Neurology
 Charles A. Dana Foundation, Inc.
 \$99,000 - 01/01/95-12/31/97

Evaluation of Long-Term Safety and Efficacy of Niacor-SR

Joseph Keenan, Family Practice and Community Health
 Upsher-Smith Laboratories, Inc.
 \$100,000 - 09/26/94-09/25/99

Support for a Judicial Education Program at the Law School

Robert Levy, Law School
 Edna McConnell Clark Foundation
 \$150,000 - 10/01/94-09/30/96

Fifth International Conference on Precipitation

Efi Foufoula, St. Anthony Falls Hydraulic Laboratory
 NASA and NSF
 \$35,000 - 10/15/94-01/31/96

A High-Temperature Resistance Thermometer

Allen M. Goldman, Physics and Astronomy
 Sota Tec Fund
 \$184,284 - 10/15/94-10/14/95

Cycle-Time Reduction in a Multiproduct Assembly Shop

Shahrukh A. Irani, Mechanical Engineering
 Cliff's Mining Services
 \$45,805 - 01/09/95-12/31/95

Virtual Environments for Rapid Prototyping of Product Interfaces

William K. Durfee, Mechanical Engineering
 National Science Foundation
 \$400,010 - 01/01/95-12/31/97

Mineral Dissolution and Precipitation Rates Under Near-Equilibrium Conditions

William E. Seyfried, Geology and Geophysics
 Michael E. Berndt, Geology and Geophysics
 National Science Foundation
 \$135,040 - 02/01/95-01/31/97

Modulation of Muscarinic Responses by Inositol Lipids

Esam E. El-Fakahany, Psychiatry
 NIH, NINDS
 \$232,682 - 02/01/95-01/31/96

Distributed Multimedia Research Center

David H. Du, Computer Science
Donald Riley, Academic Affairs
US West Communications, Inc., and Honeywell, Inc.
\$100,000 - 09/16/94-12/31/95

Pollution-Preventing Inks

Edward L. Cussler, Jr., Chemical Engineering and Materials Science
Deluxe, Inc.
\$59,000 - 01/15/95-01/14/96

Respiratory Action of the Intercostal Muscles

Theodore A. Wilson, Aerospace Engineering and Mechanics
NIH, NHLBI
\$94,046 - 12/15/94-11/30/95

An Examination of Relationships Among Manufacturing Plant Performance Criteria

Roger Schroeder, Operations and Management Science
National Science Foundation
\$102,672 - 02/01/95-01/31/96

Center for the Study of the Retail Food Industry at the University of Minnesota

James P. Houck, Agricultural and Applied Economics
Jean D. Kinsey, Agricultural and Applied Economics
Alfred P. Sloan Foundation
\$1,633,000 - 01/01/95-06/30/95

Technical Preparation Evaluation Project, 1994-95

James M. Brown, Vocational and Technical Education
David J. Pucel, Vocational and Technical Education
St of MN, Board of Technical Colleges
\$75,000 - 01/11/95-09/30/95

Partnership to Address Violence Through Education

Mary McEvoy, Educational Psychology
Sandra Christenson, Educational Psychology
U.S. Department of Education
\$965,485 - 01/01/95-12/31/95

Role of heteronuclear ribonucleo proteins (hnRMP's) in Telomere Structure and Nuclear Organization

Judith G. Berman, Plant Biology
Council for Tobacco Research
\$60,700 - 01/01/95-12/31/95

Stoichiometry in Consumer-Resource Interactions

Robert W. Sterner, Gray Freshwater Biological Institute
National Science Foundation
\$36,001 - 01/15/95-12/31/95

Differentiated Cells from a Neoplastic Genome

Robert G. McKinnell, Genetics and Cell Biology
Council for Tobacco Research
\$77,160 - 01/01/95-12/31/95

Interactions of Trait and Population Dynamics in Ecological Communities

Peter A. Abrams, Ecology, Evolution and Behavior
National Science Foundation
\$160,000 - 01/01/95-12/31/97

Role of Cell Wall Components in Enterococcal Endocarditis

Gary Dunny, Biological Process Technology Institute
Patrick M. Schlievert, Microbiology
NIH, NHLBI
\$129,065 - 12/01/94-11/30/95

Infrared Spectroscopic Studies of the Photosynthetic Oxygen-Evolving Complex

Bridgette Barry, Biochemistry (CBS)
National Science Foundation
\$90,000 - 02/01/95-01/31/96

DNA Dynamics in Concentrated Solutions

Victor A. Bloomfield, Biochemistry (CBS)
National Science Foundation
\$100,000 - 01/01/95-12/31/95

Small-Business Development Centers

Kjell R. Knudsen, Center for Economic Development, Duluth
M. L. Jensen, Business and Economics, Duluth
St of MN, Department of Trade and Economic Development
\$176,000 - 01/01/95-12/31/95

Direct and Indirect Effects of Climate Change on Boreal Peatlands: A Mesocosm Approach

John Pastor, Natural Resources Research Institute, Duluth
Jan Janssens, Ecology, Evolution and Behavior
Thomas Malterer, Natural Resources Research Institute, Duluth
National Science Foundation
\$84,620 - 09/01/94-12/31/95

Vertimill Pilot Plant Study

Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Blair R. Benner, Natural Resources Research Institute, Duluth
Electric Power Research Institute
\$420,000 - 10/01/94-09/30/96

Reduction of Taconite Concentrate Using Microwave Energy

Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Harold E. Goetzman, Natural Resources Research Institute, Duluth
Vance Leak, Natural Resources Research Institute, Duluth
Carnegie-Mellon University
\$300,000 - 01/01/95-06/30/95

Duluth Domestic Violence Prevention Program

Barbara A. Elliott, Medicine, Duluth
Melanie Shepard, Education and Human Services, Duluth
Ronald R. Regal, Mathematics and Statistics, Duluth
Minnesota Program Development, Inc., CDC Prime
\$105,939 - 09/29/94-09/30/95

Telecommunications Regional Linkage Grant

Linda Deneen, Computer Science, Duluth
Higher Education Telecommunications Council
\$632,354 - 09/27/94-06/30/95

Artificial Intelligence for Extrusion Dies Control

Marian Stachowicz, Computer Engineering, Duluth
3M Company
\$120,000 - 09/01/94-08/31/97

Monitoring Mercury Levels in Air and Precipitation

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
John A. Sorensen, Archaeometry Laboratory, Duluth
New Jersey Department of Environmental Protection and Energy
\$90,495 - 09/12/94-12/11/95

Red River Telecommunications and Information Technologies Development Project

Jerry Nagel, Chancellor's Office, Crookston
USDA
\$158,757 - 09/01/94-08/31/97

Retired Senior Citizen Volunteer Program

Deanna Patenaude, Human Resources, Crookston
Corporation for National and Community Service
\$30,332 - 01/01/95-12/31/95

MBA Program Development and Implementation at the Warsaw School of Economics, Poland

Mahmood A. Saidi, Carlson School of Management
Robert Kudrie, Humphrey Institute
Andrew W. Mellon Foundation
\$275,000 - 07/01/93-06/30/96

Sediment Transport by Glaciers on Unconsolidated Beds: A Laboratory Study of Entrainment Mechanisms and Bed Lubrication

Neal R. Iverson, Geology and Geophysics
National Science Foundation
\$94,643 - 12/01/95-01/31/97

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael P. Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only)			
Voluntary Health	Judy Volinkaty	624-3317	jud y-v@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	TBA	626-8267	
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Director, Technology Licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	William Rosenberg	624-9568	bill@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-0869	laurel-h@ortta.umn.edu
Director, Technology Licensing (Health Sciences)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Technology Licensing	Michael F. Moore	624-9531	michael@ortta.umn.edu
Technology Licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Assistant Director, Trademark and Software Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Transfer Coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort Help Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	1/589-6465	mahoneyt@caa.mrs.umn.edu

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RESEARCH REVIEW

Office of Research and Technology Transfer

April 1995

Many Challenges Face Iron-Ore Industry, Conference Reveals

The spirit of cooperation at a recent iron-ore industry conference at the University's Minneapolis campus reminded Hibbing businessman Carl D'Aquila of his efforts as a legislator to rally statewide support for the Taconite Amendment, which passed overwhelmingly in 1964. "If we let history repeat itself, our future can be very dynamic," he told representatives from industry, labor, the state legislature, state and federal agencies, the Twin Cities business community, and the University of Minnesota.

But for history to repeat itself, awareness of the industry's importance must be understood outside of the Iron Range.

"This conference is a chance for people involved in the iron-ore industry to show what's been accomplished and to discuss what's needed to stay competitive," said Regent Thomas R. Reagan before the event. He represents northeastern Minnesota—popularly known as "the Range"—on the Board of Regents and was chief of staff from 1974 to 1994 for Eighth District Congressman James Oberstar, a strong advocate for the iron-ore industry. The conference was held in Minneapolis to "show the Twin Cities business community the value of the industry in terms of jobs and state taxes paid," Reagan said.

State Representative Tom Rukavina of Virginia and Senator Jerry Janezich of Chisholm approached University officials with the idea for the conference, and Jim Infante, senior vice president for academic affairs and provost of the Twin Cities campuses, agreed to sponsor and preside over it. Infante asked Michael Lalich, director of the Natural Resources Research Institute (NRRI) at UMD, to chair a planning committee of representatives from the University, Iron

{Continued On Page 12}



A panel discussion kicked off the iron-ore conference. From left: Michael Lalich, NRRI, Carl D'Aquila, Hibbing; and Jim Infante and President Nils Hasselmo.

Photo: Nancy G. Johnson

Inside

New Payroll Numbers	2
Levels and Trends	2
Recent Journal Articles by University Faculty	3
New Titles from the University of Minnesota Press	4
Letter to the Editor	5
IRB Human Subjects	6
Announcement: Short Course on Responsible Conduct of Research	7
Graduate School News	8
Local Scholarly Conferences in May	16
University, Industry Lab Costs Comparable	16
Gingrich on Science Funding	16
Program Information	17 - 20
Faculty Research, Training, and Service Awards	20 - 22

Research and Technology Transfer New Payroll Numbers

Effective immediately, departments will be notified by e-mail of new CUFS payroll numbers on sponsored research accounts. Those not currently using e-mail will continue to be contacted by telephone.

For further information call Leslie Flaherty, 624-0895, leslie-f@ortta.umn.edu.

Research and Technology Transfer Levels and Trends

Levels and Trends in Sponsored Programs, ORTTA's annual report of funding received by the University for research, training and public service is available for FY94. *Levels and Trends* is a book of tables and graphs that describes proposals, awards and expenditures by colleges and funding agencies. A companion publication, the *Appendix*, provides details by department. Copies were mailed to deans, directors and department heads. Free copies are also available from Mary Bendtsen: 624-0583; mary-b@ortta.umn.edu.

RESEARCH REVIEW

Volume XXIV/Number 10

April 1995

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; or Aubrey Gold, 626-9895.

	07/01/94
	06/30/95
Research	
On-Campus	45.00%
Off-Campus *	24.00%
SAFHL On-Campus	55.00%
SAFHL Off-Campus	26.00%
Hormel	45.00%

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates (as of February 1995).

	Academic	Graduate Students *	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	25.6%	33.7%	30.7%
7/1/96 - 6/30/97	26.1%	35.8%	29.1%
7/1/97 - 6/30/98	26.1%	35.8%	29.1%

* Increase the indicated rates by 7.7 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertations; or if 2) the student is employed for *more* than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call Vivian Fickling at 624-2009.

Rate changes will be reflected in this section.

Recent Journal Articles by University Faculty

What follows is a small sample of the publications by University of Minnesota authors that entered the databases of the Institute for Scientific Information (ISI) during February 1995. Those databases are the source data for the *Science Citation Index*, the *Social Sciences Citation Index*, the *Arts and Humanities Citation Index*, and other indexes.

Research Review selected the citations listed here from "Research Alert," a weekly report from ISI. Reports for February record about 450 articles with an author or coauthor at a University of Minnesota address. Those reports do not, however, identify which of an article's authors

Please tell *Research Review* about your new publications so we can list them in future issues. Send citations to Phil Norcross at ORTTA, phil@ortta.umn.edu.

are from the University. Please understand that *Research Review* does not have the resources to determine the affiliation of the students, staff, and faculty whose names appear here. And please excuse the editor when he fails to recognize that a name has been truncated to fit ISI's database.

Please tell *Research Review* about your new publications so we can list them in future issues. Faculty, staff, and students with new publications are encouraged to send citations to Phil Norcross at ORTTA, phil@ortta.umn.edu.

All citations below are dated 1995 unless otherwise noted.

Engstrom, S.M., Shoop, E., Johnson, R.C. Immunoblot interpretation criteria for serodiagnosis of early lyme disease. *Journal of Clinical Microbiology* 33 (Feb.) 419-427.

Frellich, L.E., Graumlic, L.J. Age-class distribution and spatial patterns in an old-growth hemlock hardwood forest. *Canadian Journal of Forest Research* 24 (Sept. 1994) 1939-1947.

Kiang, D.T., et. al. Alternating chemotherapy regimens for patients with metastatic breast cancer: a pilot study based on tumor marker kinetics. *Cancer* 75 (1 Feb.) 826-830.

Butler, J.P., et. al. Model for a pump that drives circulation of pleural fluid. *Journal of Applied Physiology* 78 (Jan.) 23-29.

Grinnell, J., Packer, C., Pusey, A.E. Cooperation in male lions: kinship, reciprocity, or mutualism. *Animal Behaviour* 49 (Jan.) 95-105.

Yoo, H.S., Maheswaran, S.K., Lio, G.F., Townsend, E.L. Induction of inflammatory cytokines in bovine alveolar macrophages following stimulation with pasteurized

haemolytica lipopolysaccharide. *Infection and Immunity* 63 (Feb.) 381-388.

Neuman, R.M., Maher, L.M. New records and distribution of aquatic insect herbivores of watermilfoils (*Haloragaceae*, *Myriophyllum* spp.) in Minnesota. *Entomological News* 106 (Jan.-Feb.) 6-12.

Sutheerawattanonda, M., Bhattacharya, M., Moore, M. Differences in physical properties and microstructure of wheat cultivars in extrusion qualities. *Cereal Chemistry* 71 (Nov.-Dec. 1994) 627-631.

Doherty, W. Bridging psychotherapy and moral responsibility. *Responsive Community* 5 (Winter) 41-52.

Phillips, G.D., et. al. Proliferation of wound-derived capillary endothelial cells, young versus aged. *Mechanisms of Aging and Development* 77 (16 Dec. 1994) 141-148.

Gehrz, R.D., et. al. Ry Scuti: Infrared and radio observations of the mass-loss wind of a massive binary star system. *Astrophysical Journal* 439 (20 Jan.) 164-167.

Gonzales, M.H., et. al. Private reactions to public transgressions: predictors of evaluative responses to allegations of political misconduct. *Personality and Social Psychology Bulletin* 21 (Feb) 136-148.

Bauer, P.J., Hertsgaa, L.A., Dow, G.A. After eight months have passed: long-term recall of events by one-year-old to two-year-old children. *Memory and Cognition* 2 (Dec. 1994) 363-382.

Nivarthi, S.S., Vantasse, P.R., Davis, H.T., McCormick, A.V. Monte-Carlo simulation of xenon adsorption with dealumination of an idealized mordenite structure. *Zeolites* 15 (Jan.) 40-44.

Giesen, D.J., Storer, J.W., Cramer, C.J., Truhlar, D.G. General semiempirical quantum-mechanical solvation model for nonpolar solvation free energies N-hexadecane. *Journal of the American Chemical Society* 117 (25 Jan.) 1057-1068.

Matsen, M.W., Sullivan, D.E. Microemulsion and lamellar phases of a vector lattice model. *Physical Review E* 51 (Jan.) 548-557.

Blazar, B.R., Taylor, P.A., Vallera, D.A. Adult bone-marrow-derived pluripotent hematopoietic stem cells are engraftable when transferred in-utero into moderately anemic fetal recipients. *Blood* 85 (1 Feb.) 833-841.

Steiner, E., Stoken, J.M. Overcoming Barriers to Generalism in Medicine, the Residents' Perspective. *Academic Medicine* 70 (Jan.) S89-94.

University of Minnesota Press

New Titles

Spring 1995

Frances Bartkowski. *Travelers, Immigrants, Inmates: Essays in Estrangement*.

Réda Bensmaïa. *The Year of Passages*. Translated by Tom Conley. Tale of a professor in exile.

Carol A. Breckenridge, editor. *Consuming Modernity: Public Culture in a South Asian World*.

Lisa Cartwright. *Screening the Body: Tracing Medicine's Visual Culture*.

John Champagne. *The Ethics of Marginality: A New Approach to Gay Studies*.

Danae Clark. *Negotiating Hollywood: The Cultural Politics of Actors' Labor*.

Hilary Cunningham. *God and Caesar at the Rio Grande: Sanctuary and the Politics of Religion*.

T. M. S. Evens. *Two Kinds of Rationality: Kibbutz Democracy and Generational Conflict*.

John Gill. *Queer Noises: Male and Female Homosexuality in Twentieth-Century Music*.

Antonio Gramsci. *Further Selections from the Prison Notebooks*. Translated and edited by Derek Boothman.

Aaron David Gresson III. *The Recovery of Race in America*.

Johan Heilbron. *The Rise of Social Theory*. Translated by Sheila Gogol.

Micheline R. Ishay. *Internationalism and Its Betrayal*.

J. Craig Jenkins and Bert Klandermans, editors. *The Politics of Social Protest: Comparative Perspectives on States and Social Movements*.

Hank Johnston and Bert Klandermans, editors. *Social Movements and Culture*.

Lidia Jorge. *The Murmuring Coast*. Translated by Natália Costa and Ronald W. Sousa. Fiction.

Neil Larsen. *Reading North by South: On Latin American Literature, Culture, and Politics*.

Dennis J. McGrath and Dane Smith. *Professor Wellstone Goes to Washington: The Inside Story of a Grassroots U.S. Senate Campaign*.

John D. Nichols and Earl Nyholm. *A Concise Dictionary of Minnesota Ojibwe*.

Suzanne Oboler. *Ethnic Labels, Latino Lives: Identity and Politics of (Re)Presentation in the United States*.

David Palumbo-Liu, editor. *The Ethnic Canon: Histories, Institutions, and Interventions*.

Karen Pinkus. *Bodily Regimes: Italian Advertising Under Fascism*.

Christopher Prendergast, editor. *Cultural Materialism: On Raymond Williams*.

Rosaura Sánchez. *Telling Identities: The Californio testimonios*. The story of California's original Spanish-speaking settlers.

Sanford F. Schram. *Words of Welfare: The Poverty of Social Science and the Social Science of Poverty*.

Carolyn Martin Shaw. *Colonial Inscriptions: Race, Sex, and Class in Kenya*.

Tzvetan Todorov. *The Morals of History*. Translated by Alyson Waters.

David Trend. *The Crisis of Meaning: In Culture and Education*.

Steven Ungar. *Scandal and Aftereffect: Blanchot and France Since 1930*.

Asha Varadharajan. *Exotic Parodies: Subjectivity in Adorno, Said, and Spivak*.

Daniel S. Wovcha, Barbara C. Delaney, and Gerda E. Nordquist. *Minnesota's St. Croix River Valley and Anoka Sandplain: A Guide to Native Habitats*.

Letter to the Editor

Dear Research Review:

The following letter responds to "Take Cold Fusion Seriously," Research Review, February, 1995.

I have known Richard Oriani for at least a decade, and during much of that time was associated with him in work on fundamental science associated with the understanding of corrosion. I came to respect his scientific work and his knowledge particularly on the subject of hydrogen in metals. At the outset of his work on possible anomalous phenomena occurring during hydrolysis of heavy water by palladium, I agreed to be involved as theoretical advisor on his project. In collaboration with J. L. Valles, then a post-doctoral associate in the physics department, we made some calculations of the expected rate of deuterium fusion in palladium, taking into account some features which previous theoretical calculations had omitted. Unfortunately, and like every other theoretician who considered the problem around that time (1989-90),¹ we predicted an almost unimaginably slow fusion rate,² suggesting that the experimental reports, if true, would have to be indicating the existence of some hitherto unknown law of physics.

At the same time, it became evident that the experiments were not reproducible. Many of the reported phenomena, particularly anomalous heating, only occurred in a small, unpredictable minority of samples. Other phenomena, often involving detection of the high-energy nuclear radiation to be expected if fusion were taking place, were reported, sometimes consistently, in one laboratory, but could not be seen at all in others. A careful reading of Phil Norcross's report on Richard Oriani's talk will reveal that Professor Oriani reported that this situation has not changed appreciably in the succeeding six years.

I do not believe that there is much dispute about the statements in the preceding two paragraphs. What is in dispute is the question of what attitude should be taken toward the facts. The majority of physical scientists and funding sources have concluded that it is not worthwhile to spend large amounts of scarce resources seeking to observe a phenomenon which extremely well-established theory says should not occur and for which there is no compelling experimental evidence. On the other hand, a few funding agencies (EPRI, ONR, Toyota) and a minority of scientists have taken the view that the payoff would be so great that it is worthwhile continuing experiments to see if the fragmentary and often inconsistent experimental reports are indicative of a real, theoretically unexpected phenomenon.

There is nothing scientifically inappropriate about the situation as I have described it. Unfortunately, however, things are not as healthy in this field as this description might sug-

gest. This is probably in part because, as Dr. Oriani complained, adherents to the majority view described above have sometimes been tactless in their public remarks about people in the minority.

Further, as the majority has lost patience with the minority (see below), it has undoubtedly been difficult for the minority to get a serious hearing in traditional journals and meetings.

On the other hand, and unfortunately Dr. Oriani did not mention this, members of the minority have often not reacted in what many would regard as a scientific manner to sober scientific criticism of their work. Samples have not been readily exchanged, reputable and serious critics have not always been invited to present their views at meetings, data and methods have not always been fully described, and allegations of fraud have not always been vigorously investigated. In the view of some, the group of scientists working on this set of problems has degenerated into a cult, not open to scientific criticism and essentially talking only to itself. For a relatively balanced, humane, and well-written description of some sociological aspects of this situation, I recommend a recent article by David Goodstein, Vice Provost at Cal Tech.³

In my view, it cannot be ruled out that some interesting phenomena lie behind the fragmentary reports of anomalous experimental observations described by Dr. Oriani. In view of the various inconsistencies, however, these reports cannot be regarded as establishing the existence of scientific facts at the present time. Whether this situation leads the reader to "Take Cold Fusion Seriously" as the headline paraphrases Dr. Oriani, and whether in particular it means that there should be more funding for this work, requires a subjective judgment. My judgment is 'No,' but obviously others may differ.

J. Woods Halley, Professor
School of Physics and Astronomy

¹ A. J. Leggett and G. Baym, *Physical Review Letters* 63 (1989) 191; P. Richards, *Physical Review* B40 (1989) 7,966; Z. Sun and D. Tom, *Physical Review* 63 (1989) 59; S. E. Koonin and M. Nauenberg, *Nature* 339 (1989) 690.

² J. W. Halley and J. Valles, *Physical Review* B41, (1990) 6072.

³ D. Goodstein, *The American Scholar* 63 (1994) 527.

Institutional Review Board: Human Subjects Committee

Diagnostic Review of Selected Studies Involving Human Subjects

The Institutional Review Board: Human Subjects Committee (IRB), in conjunction with the acting vice president for research, conducted a diagnostic review of selected studies as part of an ongoing test of assurance of compliance. The following is excerpted from a report made to the Board of Regents on February 9, 1995.

The Audit Committee of the Board of Regents asked the administration to conduct a diagnostic review of studies as part of institutional compliance with federal regulations. The acting vice president for research hired a consultant with experience in clinical monitoring and quality assurance in research. The consultant worked closely with IRB staff.

The Institutional Review Board: Human Subjects Committee selected nine studies for in-depth review and diagnostic analysis for purposes of assuring compliance with regulations and policies.

The selected studies included:

- Studies that involve investigative drugs or devices (highest risk)
- Studies with nonstandard funding
- Studies with single investigators (no visible oversight)
- Studies from departments or principal investigators (PIs) with history of problems.
- Studies in which the PI has a potential for conflict of interest

Studies were selected from the Medical School for this initial review.

The diagnostic analysis included:

- Review of initial submission/application to the IRB and subsequent changes—review of the research records maintained by the PI
- Review of consent process and actual consent documents
- Review and verification that appropriate numbers and profile of subjects are being enrolled
- Review of outcomes of study and reporting of adverse events
- Review of management of study and adherence to the approved protocol
- Review to assure that individual subject or patient records (30 percent) confirm findings
- Interview with investigators and study coordinators

The diagnostic review was conducted during a three-month period and was conducted under the authority granted to IRBs and institutions in 45 CFR 46 and 21 CFR 50 and 56.

Diagnostic Review Results

The consultant was asked to provide a “report card” on each study reviewed. The report included a statement of sufficiency of compliance and recommendations for action if necessary.

Overall recommendations for conduct of studies and report on the IRB were also generated by this review.

Aggregate report on the studies:

- Eight of the nine studies had protocols on file
- All studies had appropriate consent forms available
- IRB correspondence was on file and was considered appropriate
- Adverse events had been reported and documented
- Device and drug inventories were adequate in eight of nine studies
- Seven studies rated as “acceptable”; two rated “acceptable with stipulations”

General recommendations for researchers:

- Inventory records of investigative devices must be maintained with study documents
- Consent forms should be consistently located in patient charts and in administrative files
- Standard operating procedures for storage of drugs and devices must be developed
- Correspondence to and from the FDA must be copied to the IRB
- Consent should be signed by the PI in charge

Report card and general recommendations:

- Study records were complete and in compliance with regulations
- The IRB is geographically inaccessible to researchers and to subjects
- Education efforts must be accelerated to include a description of IRB processes and policies

{Next Page}

Human Subjects

{From Previous Page}

- There should be standardization of consent forms format, styles, and language usage
- Correspondence should include reference to all amendments
- Timing of review should be explained to researchers
- Bureaucracy is slow
- Timing should be accelerated in many cases (six-week turn-around is ideal)

Institutional support is needed for:

- Education on safe and effective clinical trial management and the proper conduct of research
- Establishment of data safety monitoring efforts
- Education of IRB members

Needs not yet addressed:

- A repository for investigative devices
- An interface with the pharmacy for handling investigative drugs
- A system to maintain outpatient charts (at least when investigative drugs and devices are being administered)

Plan of action:

The diagnostic review identified several areas that require action. In response, the IRB and the acting vice president for research are:

- Working with the Academic Health Center to identify space for relocating the IRB office at centrally located space accessible to the IRB members and researchers
- Re-examining processes for reviewing initial and ongoing requests for human subject research to streamline the process
- Clarifying the roles and responsibilities of PIs for protecting human subjects
- Strengthening and accelerating the plans for providing an educational component of the IRB (this

goal is consistent with other reports and analyses by internal and external groups)

- Establishing better coordination among entities in the University system for study and resource management

The diagnostic review was very helpful in assuring compliance with human subjects regulations. The exercise also yielded valuable feedback for the IRB process and reinforced the recommendations made in other reports for more extensive education and training of researchers and their staff. The IRB will be incorporating many of the recommendations in plans for the coming year. Consideration is being given to incorporating this diagnostic review activity into regular monitoring and compliance review.

For more information, call Moira Keane, 624-1889, moira@ortta.umn.edu.

The Center for Biomedical Ethics, Office of the Provost, Academic Health Center
and
The Office of the Vice President for Research
present

A Short Course on Responsible and Successful Conduct of Research

Wednesday, May 24, 1995

9:00 a.m. - 3:00 p.m.

Radisson Metrodome Hotel

— *Introduction to Responsible Conduct of Research* —
— *Ethics of Research (authorship, data handling, mentorship)* —
— *Conflict of Interest: Health Sciences and University Perspectives* —
— *Research on Human Subjects: IRB's and Informed Consent* —
— *Research on Animal Subjects* —

Advance registration is necessary for lunch and course material. To register, contact the Center for Biomedical Ethics at 626-9756.

As part of NIH training grants, the institution is required by NIH to provide a program on ethics in conduct of biomedical research. This course is in response to that requirement. Faculty participating in the course offered by the Department of Surgery are not required to attend.

The course is approved by the University of Minnesota Continuing Medical Education Department for 4.0 credit hours in category 1 of the Physician's Recognition Award of the American Medical Association.

Graduate School News

The Academic Life: Is It Worth Living?

December Commencement Address by Dr. Erich S. Gruen

During 1994, while serving as Visiting Hill Professor in the University of Minnesota's Department of Classical and Near Eastern Studies, Dr. Erich S. Gruen was asked to address the December 7 Graduate School commencement ceremony. A transcript of his speech, "The Academic Life: Is It Worth Living?" is printed below.

Educated at Columbia, Oxford, and Harvard Universities, Dr. Gruen, a native of Vienna, Austria, is currently the Gladys Rehard Wood Professor of History and Classics at the University of California, Berkeley. Among his many honors are a Rhodes Scholarship, two Guggenheim Fellowships, election to the American Academy of Arts and Sciences, nomination for a National Book Award, and a Phi Beta Kappa Award for excellence in teaching. Dr. Gruen has also held teaching positions or visiting professorships at many other universities, including Cornell, the American Academy in Rome, Princeton, the University of Cincinnati, Hebrew University, the University of Colorado, and Oxford.

It is my pleasure and privilege to greet you here tonight. For the new graduates, this is your official welcome into the company of certifiably educated persons. You now have the formal certificate whereby to establish that particular status, a certificate well-earned, a sign of those years of toil and sweat. It is no small thing, that piece of paper. It may not pay off all the student loans that you have accumulated over the last several years, but the degree is heavy with symbolic value. It represents a mighty investment of time, energy, and intellect; and you deserve every congratulation, you who have attained that desired goal that you set yourself, whether a master's degree or doctoral degree. And you are not the only ones to be congratulated. It is customary at commencement exercises, at least at undergraduate commencement exercises, to hail the parents: the parents whose prodding, patience, and purses have allowed you to reach the status that you have now attained. When one is addressing graduate students, however, it is often more than just proud parents who are present. Given the length of time required to write an M.A. thesis, not to mention a Ph.D. thesis, there may be as many proud children of the degree recipients as there are proud parents, perhaps not here in the audience, but somewhere. That certainly was the case when I finished my Ph.D. thesis. My daughter was two and a half at that time, jumping for joy that, as she put it, "Daddy finally fin-

ished his feces." Several reviewers of the book which grew out of the thesis might well have agreed with that characterization.

My commencement ceremony, many years ago, launched

me into the academic life. And the academic life is my subject tonight. Why is this important; why is this relevant to you? Although some of you will be embarking upon an academic career yourselves, most of you are entering other professions, other walks of life. All of you, however, have been intimately engaged in the academic scene for the last several, or perhaps many, years. The achievements celebrated here tonight are all academic achievements, and each of you owes much to the mentoring,



Dr. Erich S. Gruen

the nurturing, and the sheer learning of the professoriate at this university. The faculty here and at universities throughout the country have the responsibility for training almost the entire leadership of our society, in science and technology, medicine, the arts, education, religion, journalism, business, even government and law. We are not always proud of all of our products, especially in those last two categories—I can say this with impunity, because the Law School is not involved in this commencement tonight—but we have had a few winners even in that company. This mentorship is, after all, the heart of the university's mission. Faculty and students constitute the essence of higher learning. They are not, as the public sometimes tends to think, the employees and the customers respectively of the university. They *are* the university. Their collaboration reverberates well beyond the conferral of the degree. This is especially important in our present day, because as you know, these are not the most prosperous, not the most flourishing times for the academy. The results of last month's

Graduate School News

elections, moreover, suggest that worse may be in store in terms of public support for higher education.

So part of my message tonight is to stress the importance of *your* continued allegiance as alumni and beneficiaries of this university, the importance of *your* role as advocates and supporters of the academic life, which has come under increasing attack. The most notorious assaults, the most highly publicized ones, are usually also the most overblown and empty ones, but damaging nonetheless. For example, the furor over multiculturalism. We have taken a lot of flak over this. The perspective of politicians and the media might lead one to believe that campus catalogs are bulging with exotic courses, such as classes on Aboriginal civilization, or the history of Timbuktu, or Mongolian women's literature, while Homer and Shakespeare are no longer read and Western culture is relegated to second-class status, or even worse, branded as nothing but the record of oppression and racism. These are wild distortions bearing little relation to reality. Our curricula have in fact been enriched by a variety of offerings that had been unavailable and inaccessible to previous generations. Our eyes have been opened in recent years to a range of peoples and contributions throughout the world that had hitherto been unexplored. But this has not meant abandonment of the Western classics or dismissal of the study of Western culture. The truth is that ours is a multicultural society, and by no means the only one. It should be noted that the area considered to be the very cradle of Western culture, namely the ancient Mediterranean, was the multicultural society par excellence. It comprised diverse peoples and cultures that stretched from the Straits of Gibraltar to the river valley of the Indus. In other words, a respect for Western traditions and an appreciation of multicultural diversity are entirely compatible, a fact that the academy recognizes and fosters, to its credit, and the media consistently misrepresent and misunderstand.

One might say the same about another attack on the academy, for so-called political correctness, or PC—the phrase has become so notorious that you need only the initials now to identify it. Here too, the outside world, or a portion of it, imagines that campuses are dissolved in strife. As a common scenario has it, there is conflict between those who at the one extreme advocate programs like womyn's studies, spelled "womyn" so as not to have "men" in it even at a second remove, and those at the other who declare that academic freedom itself is in jeopardy if somebody finds a professor's off-color jokes offensive. The national publicity given to this issue is grossly out of proportion to any reality that it possesses on university campuses. The fact that most professors are now more sensitive to the language they employ, especially toward persons and groups to whom derogatory language had been unthinkingly directed in the

past, is a distinct plus. It has not divided colleges into warring camps, and apart from the verbal pyrotechnics of a few on the outer ends of this spectrum, the issue has barely made a dent in the day-to-day activities of the university community—despite what the press might lead one to believe.

The public holds other damaging misconceptions about academics. One thinks of the conventional stereotypes of the professoriate. We have all heard that they are a pampered, pompous, pretentious bunch; that they are often eccentric and unworldly; that they are secure in their tenure and thus indifferent to criticism; that they spend only eight or nine hours a week in the classroom; that they are impatient with students; that they burrow away in their research, writing longer and longer books on smaller and smaller subjects published at higher and higher prices for a tiny readership that cannot afford to buy them anyway. Besides, they are not even around all that much. They spend much of their time jet-setting about the world attending conferences and meetings in Rome or Paris or Monaco or Tahiti, where they gather with their buddies to hear themselves talk; and they get paid for it on top of that—not to mention their collection of frequent flyer coupons. It is no wonder that some of them are referred to by cynics as the "TWA Professor of Physics" or the "Swiss Air Professor of Chemistry." These are the common criticisms, the stereotypical images. They fit very few academics whom I know. In actuality, the overwhelming proportion are dedicated, devoted, and indeed overworked. The eight or nine hours in the classroom do not begin to tell the story. Sixty hours or so altogether is more like it. Scientists spend long days in the lab, pursuing their own research, to be sure, but simultaneously training students, collaborating with graduates and post-docs, and preparing the next generation of researchers. Those who live at their desks, who pound away at their computers, are not just pursuing some arcane trivia to produce one more article to fatten the c.v., to make their colleagues envious, or to impress the dean—who never reads any of them anyway. The bulk of their time, rather, is spent in preparing for the classroom, composing or refining lectures, drawing up course materials, advising students, reading papers and exams, attending committee meetings (many on improving instruction), overseeing theses or dissertations, writing reports and recommendations, and then trying to snatch the odd hour to do some reading in order to keep abreast of their fields and to stay ahead of their best students. All of this fosters the ongoing and mutual relationship in the process of learning. The professoriate is not an idle, self-indulgent lot. So I think we can dispense with the invented caricatures, the media stereotypes, the public misperceptions, the politicians' whipping boys. These are all sham problems.

Graduate School News

Some real problems need attending to, most particularly economic ones. The academy benefitted from a great boom in the 1960s, in the aftermath of Sputnik and the race to surpass the Soviets. That meant the pouring of federal monies into the universities and the vast student enrollments that were fueled by the post-war baby boom. Student numbers mushroomed in that decade, creating demands for more faculty. Small campuses, even teachers colleges, suddenly became universities, with M.A. and Ph.D. programs springing up everywhere. The number of doctorates that was awarded tripled in about a decade, from 1958 to 1970, and almost everybody who wanted an academic job got one. Well, not any more. Things began to go downhill already in the early 1970s. Federal support for higher education, especially for graduate fellowships and research programs, declined. The baby bulge was over and enrollments began to slip. The production of Ph.D.'s had been overenthusiastic and overoptimistic. Suddenly there was a glut on the market. Universities stopped expanding, and very few professors were retiring; after all, most of them had entered the profession in the 1960s and were much too young to step down. So a half-generation or so of Ph.D.'s was simply left stranded. Circumstances seem still bleaker today. The recession has hit universities hard. Retrenchment, reduction: these are the orders of the day. Even the graying of the professoriate has not helped much. All those faculty who were hired in the 1960s are indeed finally aging, maybe in some cases doddering, looking to retirement, occasionally being hastened into retirement by golden handshakes from enterprising administrators. But the administrative purpose has been to save costs and trim personnel: the retirees are not being replaced in anything like adequate numbers.

The matter is complicated further by the coming of affirmative action: a laudable, worthy program with very important achievements, yet with unfortunate effects in its timing. The efforts to redress sexual and racial imbalances on university faculties began to go into high gear in the early 1970s, just when the academic markets started to tighten and constrict, just when the surging tide of employment of the previous decade slowed to a trickle. Affirmative action has been responsible for some significant gains, particularly in the marked increase in the numbers of women on our faculties, no longer clustered just in the part-time, temporary, nonladder positions, but moving steadily in ever more impressive numbers through the ranks of the regular faculty. This is a real achievement. Recruitment of minorities has been slower, more difficult, less impressive, but at least hopeful, with some progress. Yet certain critics of affirmative action have charged that it has led to a decline in the quality of appointments. This is little more than political rhetoric. Our faculties have benefitted and will continue to

benefit from enhanced diversity of composition, from persons who bring to the campus not only intellectual achievements of a high order but also a range of experiences and backgrounds that had simply been unavailable in the homogeneous and largely homogenized professoriate of the past. There are, however, victims in this. Since affirmative action took hold in a period of economic stringency, administrators on the one hand seek to expand the numbers of women and minorities, while on the other they have to cut personnel across the board. As a consequence, an allegedly endangered species in the academic world would seem to be the young, white male, waving his coveted Ph.D. earned after years of hard labor, but often unable to cash it in at the employment office.

With so dismal a picture, is the academic life worth living? There are good reasons to give an affirmative answer to that question. Having provided all these gloomy pronouncements, I now want to offer a more upbeat assessment, a more optimistic outlook, and an encouragement for your continued pride in and advocacy of the academy. First of all, the demographic forecast shows some hopeful signs. The post-baby boom decline has flattened out. Birth rates have risen from the mid-1970s and continue to rise in the 1990s, so the college-age population should have something of a resurgence in the second half of this decade and proceed on a steady climb for at least another decade or two. At the same time, our graying faculties will get grayer, maybe wearier. To be sure, the mandatory retirement age has recently been lifted, and nobody can be forced out. Some professors may choose to stay until they drop—usually the wrong ones, just the ones who should have retired twenty years ago, those whom no golden handshake, no matter how lucrative, can induce to step aside. Like the professor who, we are told, was hanging on long beyond his active and productive years, if ever he had any: When he was asked by his dean, "Why don't you retire at two-thirds pay?" he said, "Why should I? I am already retired at full pay." Such persons constitute a small, very small, minority, I am happy to tell you. Most faculty in fact will step aside at more or less the time when they would have under the mandatory system. Whatever the decisions of individuals, we can count in general on the relentless assistance of father time. That huge bulge of the professoriate that was hired 30 to 35 years ago will be at or near retirement age by the end of this decade. So even those who cling tenaciously to their desks and their offices may be carried out feet first before too long. As a consequence, large numbers of empty slots should open up just when student numbers begin to increase conspicuously. It is true that economic circumstances will not permit a full replacement policy, with each gap left by a dried-up old veteran plugged by some fresh new face. The discrepancies, however, will

Graduate School News

be stark enough to motivate rebuilding programs on a substantial scale.

This is an optimistic scenario, but, I think, a not altogether unrealistic one. The economy shows signs of emerging from the recession, pretty clear signs recently, and as vacancies accumulate in the professoriate, new appointments will occur, perhaps in appreciable numbers, well outstripping the slump of the past two decades. Not the least of the benefits of this projected rebuilding lies in the opportunity for the rethinking and reconceptualizing of university curricula, the reshaping of programs, the crossing of traditional lines, the promotion of interdisciplinary work, and the collaborative efforts that break down former departmental boundaries: all of these pumped by the new blood that will be brought in shortly. Such developments, I suspect, will make the coming decades among the most exciting in academia. We are not going to be awash in money, but I hope that even tight-fisted legislators may recognize the political virtue of supporting the universities in order to educate the children of their own constituents. State universities like this one have now become more energetic and more aggressive in seeking out untapped resources in the private sector, where a substantial reservoir of good will toward higher education does exist and manifests itself with larger contributions every year.

Even with this optimistic scenario, however, will young people be attracted once again into the professoriate? Is the academic life, despite recent problems, still attractive? Let me give you what I think is a compelling answer. Even in the worst of times, from the mid-1970s to the early 1990s, there was no appreciable decline in the quantity or the quality of those applying to graduate school and prepared to take their chances, however dwindling they might seem, for entering into the academic world. They were certainly not doing it for the money. Although academic salaries have risen and in most universities are now more than respectable, they do not approach the levels available in certain other professions or in the corporate world or even, dare I say it, in university administration. There are evidently motives more compelling than money. First and foremost, professors love what they do. Few of them, if given the chance to start over, would do anything different. Of course, some of them are not equipped to do anything different, but that is another matter. For many, the satisfaction obtained in teaching is incalculable, whether because they relish the chance to parade their rhetorical wares before a packed classroom (the actors and entertainers among them) or because they thrive on training even a single student in the mysteries of their own discipline. For others, the excitement of research, the thrill of new discoveries, or the pride in advancing an old problem through a novel and imaginative

interpretation bring indescribable rewards. For most, the combination of teaching and research, each providing sustenance for the other, is the very essence of the academic life. And to receive a salary for doing what you would do anyway if given the chance can't be bad.

You will find beyond all this an additional advantage: academic freedom. "Academic freedom" is a phrase much bandied about and argued over, frequently misunderstood. It does not mean that professors feel free to pontificate about anything, to speak irresponsibly on matters they know nothing about, or to make insensitive and offensive remarks whenever they please. Academic freedom resides in a system that places full confidence in the abilities and the professional standards of its faculty. This is not a matter of blind faith. Faculty members are appointed only after the most rigorous and careful scrutiny. They obtain their positions because of thorough training, high intellectual and technical skills, and a commitment to the classroom. Undoubtedly, some mistakes have been made in these appointments, but they are few and we can live with them. Once the appointment takes place, we operate on the assumption that the professor requires little surveillance or control. Professors are indeed free, free to carry out the mission for which they had long prepared and to which they had devoted themselves. They can pursue without external restraint the collaboration with colleagues and the interchange with students that generate productive research and the most effective reciprocal learning. The freedom to do what one has long been trained to do, what one has always dreamed of doing, to do it well and to benefit thereby not only oneself but a generation or more to whom one can communicate that enthusiasm, is very precious indeed. So we needn't wonder that intelligent and dedicated young people, even young white males, still aspire to the academic life. They will take the same pride in conferring degrees upon their students that we now take in conferring them upon you. I trust that you will have the same pride in defending, supporting, and promoting that academic life which has been instrumental in bringing you to this day, which launches you on the commencement of your careers, and whose representatives up here wish you every success in the future.

Range Resources and Rehabilitation Board, Department of Natural Resources, U.S. Bureau of Mines, Iron Mining Association of Minnesota, and United Steel Workers of America.

The conference, titled "A Discussion of the Minnesota Iron Ore Industry — A New Beginning," was held February 28 and March 1. More than 175 participants engaged in a broad range of discussions concerning the economic and technological trends affecting Minnesota's iron-ore industry. They also enjoyed Iron Range ethnic foods and were entertained by The Singing Strings, 20 exceedingly talented young violinists/singers from seven Iron Range communities, directed by Helina Pakola.

A Valuable Partnership of University, Industry, and State

Infante opened the conference by noting how appropriate it was for the University to be the host, given the over 100 years of linkage between the prosperity of the iron-ore industry and the Permanent University Fund (PUF) established by the University's state charter and the federal

The industrial value and tax revenue of taconite make it the most valuable technology ever transferred from a university laboratory to industry.

— President Hasselmo

land grant of 1862. By the end of 1994, income from mining leases on the University's land exceeded \$75 million of the \$135 million total PUF assets, enabling the University to match private gifts and endow over 180 academic positions. The newest of these is the PUF Chair in Taconite Research, for which a campaign is underway to raise \$1.5 million in private donations to be matched with 50 percent of new mining-related PUF funds. Up to \$25 million from this half of the new funds will support research at the NRRI's Coleraine Minerals Research Laboratory. The other half of new PUF mining monies will support an endowment to provide Iron Range Merit Scholarships to students attending one of the University's four campuses.

University of Minnesota President Nils Hasselmo then welcomed participants to the conference, saying, "I am happy to see the theme of long-term partnerships represented by this conference." Hasselmo explained the University's U2000 strategic plan and the theme, *We're the long-term solution*. "The development of the taconite process is a perfect example of the University's ability to be the long-term solution," said Hasselmo.

Edward W. Davis (1888-1973), superintendent of the University's Mines Experiment Station for 32 years, worked with colleagues at the University and in industry from 1914 to 1955 to research, develop, and transfer the taconite process. Taconite ore has since provided over \$1.9 billion in state tax revenue, and total annual salaries and expenditures by the seven taconite plants total nearly \$1 billion and generate another billion dollars of related economic activity.

"In terms of the industrial value and tax revenue generated by taconite production, we believe it is the most valuable technological process ever transferred from a university laboratory to industry," Hasselmo said. "The University of Minnesota is proud to partner with the state, industry, and labor to carry on the legacy of E. W. Davis, helping to ensure the health of Minnesota's iron-ore industry.

"I feel it is part of my job to champion the University's outreach to industry for the sake of economic development," said Hasselmo. "I am not the first to feel this way. One of my predecessors, James Lewis Morrill, became personally caught up in Davis's mission. In 1948 President Morrill was guest of honor at a Newcomen Society dinner at the Minneapolis Club. For his address to the American arm of this British society dedicated to celebration of industrial advances, Morrill chose to speak on 'Taconite! Sleeping Giant of the Mesabi.' The fact that he included an exclamation mark after the word *taconite* indicates how caught up he was in Davis's project. Like President Morrill, I am excited by current research and technology transfer projects being carried out by our faculty."

Professor Davis's work in developing the taconite process was highlighted in a new film premiered at the conference, "Minnesota Mining: A New Beginning." Produced by the History, Education, and Research Division of the Iron Range Resources and Rehabilitation Board (IRRRB), the film was very well received as a concise summary of the industry's history and future challenges.

Speaking with D'Aquila in an opening panel discussion were Lalich; Senator Doug Johnson, Cook; Doug Schrader, President of the Iron Mining Association of Minnesota; and David Foster, director of the United Steel Workers of America District 33, which includes Minnesota. Each spoke of the need for statewide awareness of the industry's value and challenges, and of the need for cooperation among all groups to keep it healthy.

Lalich urged aggressive research and development to keep Minnesota taconite the raw material of choice for steel industry blast furnaces. "The pellets made 10 years ago would not be acceptable today," he said. "Minnesota's high-tech pellet has to change constantly to remain technologically and economically competitive."

Minnesota Tax Revenue from Iron Ore and Taconite Mining 1914-1994: Over \$3.7 Billion Total

Iron Ore 1914-1993

Ad Valorem Tax:	\$1,055,962,517
Occupation Tax:	574,691,689
Royalty Tax:	86,646,705
Total:	<u>\$1,717,300,911</u>

Taconite 1914-1993

Production Tax:	\$1,338,831,778
Occupation Tax:	227,421,223
Sales & Use Tax:	168,480,742
Royalty Tax:	64,670,615
Railroads:	59,613,363
School Bonds:	36,820,038
Unmined Taconite:	4,953,579
Total:	<u>\$1,900,791,338</u>

Taconite 1994

Estimated total:	<u>\$ 95,538,000</u>
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<u>Grand Total</u>	<u>\$3,713,630,249</u>
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Source: Minerals Tax Office, Minnesota Department of Revenue

Senator Johnson commented that the health of Minnesota's iron-ore industry is vital to our state and nation, and that in keeping it healthy, the "tax issues of taconite are every bit as complex as the technical issues." He noted that legislative changes since 1984 have resulted in a total of \$189.2 million in tax relief and investment incentives.

Comments by Foster and Schrader spoke to the new spirit of cooperation, rather than confrontation, that characterizes recent discussions between labor and industry. Foster said cooperation at this time is critical, because "our futures are immanently bound up together if we are to survive." Schrader said that as president of the industry association he has spent the past three years speaking throughout the state about the very complicated economic circumstances affect-

ing iron-ore companies and employees. "I have heard a tremendous concern and support for this industry from all walks of life," he noted. "I believe we can have seven taconite plants operating well into the next century, but if we don't make cooperative decisions we could lose some of that."

Presentations from a wide variety of speakers addressed all facets of the iron-ore and steel industry over the two-day conference. Lewis V. Wade, director of the U.S. Bureau of Mines Twin Cities Research Center, spoke of the economic impact of Minnesota's iron-ore industry. He noted that because of Minnesota's research and economic assistance, its industry is providing 70 percent of the U.S. supply of iron ore, whereas states such as Pennsylvania, Missouri, Alabama, and Wisconsin have seen their iron-ore mines close. For example, "the Taconite Amendment led to \$3 billion in private investment in taconite mines and processing plants [in Minnesota]," he said. Production in 1995 is expected to reach nearly 48 million tons, approaching the capacity of Minnesota's seven taconite plants, Wade added.

Labor Relations, at Home and Abroad

Representatives of several iron and steel companies emphasized the global economy within which Minnesota must compete. They noted tremendous changes in the U.S. steel industry since the depression of the 1980s, allowing the industry to rebuild itself to a position of world leadership. "If we as managers and unions get out of the way, the U.S. worker will outproduce any employee in the world," claimed John D. Correnti, COO of NUCOR, Inc., a non-union iron mini-mill company based in Charlotte, North Carolina.

Robert Vargo, senior research engineer for U.S. Steel, presented the positive and negative factors impacting demand for taconite pellets. Negatives include declining blast furnace steel making, with remaining furnaces requiring higher-quality pellets. "The future of the blast furnace depends on the supply of coke, not on the supply of pellets," he said. "And it is far less expensive to build new electric arc furnaces than it is to rebuild coke-fueled blast furnaces." Positives include the fact that cokeless ironmaking uses pellets as long as the price and quality are competitive with foreign ore, scrap iron, and direct-reduced iron. Another positive trend is that many European iron plants are being shut down for environmental reasons, diverting more east Canadian iron exports to Europe rather than to the U.S. However, environmental factors also impact U.S. ironmakers, along with quality, cost, and productivity.

An international perspective on the iron-ore industry was provided by Diarlhes Pider Benjamin, general coordinator of the National Confederation of Mineral Sector Workers in Brazil. He reported that more than 80,000 workers in 120 open face mines annually ship 180 million tons of iron ore out of Brazil. The workers' wages average \$280 per month,

and Brazil has the highest number of work injuries in the world. Benjamin said 70 percent of the mine workers are unionized, but there is a limited freedom to strike, and the national labor law is not clear enough to protect workers. Benjamin said that Brazilian and U.S. labor organizers need to work together with those in other nations to level the playing field for workers and companies.

George Becker, President of the United Steel Workers of America, said that there is definitely a new direction in bargaining, involving a partnership of labor and management. "We know that companies are under the gun" in terms of global competition, he said, but if the United States goes all out to compete against nations like Brazil that have far weaker environmental and labor regulations, then "we're in a race to the bottom." In response to a question about companies requiring excessive overtime to increase productivity without adding employees, he responded that it worried him very much, because it was another example of the declining standard of living and increased pressures on working middle-class families. But the problem the union faces in trying to raise support for overtime limits is resistance from workers as much as from management, he noted.

Becker reminded participants of the tremendous human suffering caused by the steel depression of the 1980s, when 65 percent of the steel industry was shut down, and his union lost a half-million members. "Many of those communities never recovered; many of those men, women, and families never recovered," he said. Labor concessions were made during the period of rebuilding, but labor did achieve some very important gains. "We negotiated reinvestment of future profits back into the industry, and we got a union representative on the board of all the integrated steel companies. Our people are not on the boards to win votes, but to take the worker perspective to the boardroom, and to let workers at least know what the hell is going on with company strategy." Becker also noted the 10 cents per hour training fund set up for steel workers, which is being used by 60 percent of the workforce to pursue training or education in any area desired.

A very upbeat message on the industry was presented by Andrew Sharkey, president of the American Iron and Steel Institute. About 170,000 employees work in the industry, he said, and thanks to \$30 billion dollars invested by companies and to productivity partnerships with employees, the worker-hours needed to produce a ton of steel has been reduced from 10 hours in 1982 to 4.2 hours in 1994.

Sharkey asked all present to work together to make steel "the material of choice for the 21st century." The industry's ultimate competition is not foreign steel or different technologies for making iron and steel, but rather alternative materials such as aluminum, plastics, concrete, wood, and composites, he said. Automobiles continue to be the leading

steel product, but the fastest area of growth is in residential construction, where steel-frame homes are expected to double from 40,000 last year to 80,000 this year. "Recycled steel from four automobiles is enough to frame a house," Sharkey said. A major part of his institute's marketing message focuses on recycling, because "the 66 percent recycling rate for steel is the highest of any recyclable material."

Cooperative Environmental Protection

Environmental protection was addressed by Charles Williams, commissioner of the Minnesota Pollution Control Agency (MPCA) since 1991. He recalled his mining roots and work as an engineer at Reserve Mining in the 1970s, during the difficult period of negotiation with the state over air and water quality standards. "In the 1960s and 1970s environmental regulations were new, and regulators had to be heavy-handed to get results," he said. "But in the late 1980s progress stopped, and the MPCA realized it had to help people comply."

As a result of this new approach, Williams said his agency now has a good working relationship with iron-ore companies. "Now we bring in all the stakeholders and develop a compliance schedule" outlining everything the company needs to do to comply and how it can test itself to measure progress, he said. A legislative proposal is now being considered to grant amnesty to companies that are cooperating in good faith with the MPCA on such a compliance schedule.

Commenting on the current issue of whether mining companies can return waste rock and tailings to mine pits, Williams said MPCA will closely evaluate results of current studies of the environmental impact of the proposed practice. "I have to look the public in the eye and say there will be no impact on groundwater," he said.

Because of Minnesota's leadership in cooperative environmental compliance, Williams was asked by federal Environmental Protection Agency (EPA) head Carol Browner to lead an EPA initiative called the Iron and Steel Common Sense Initiative. He has brought together representatives of labor, management, and environmental groups to recommend ways of simplifying the industry's environmental compliance and to bring common-sense approaches to EPA regulations. He challenged companies to support and participate in the new initiatives, which will rely heavily on company expertise to reach performance-based environmental standards within negotiated time periods.

New Iron and Steel Technologies

The final session of the conference focused on the impact on the industry of research and new technologies. Rodney Bleifuss, director of the University's Coleraine Minerals Research Laboratory, a division of the National Resources Research Institute, outlined current investigations of taconite-processing improvements. He noted that the basic

Davis flowsheet is still sound, but there are many opportunities to improve efficiencies and cut costs at each stage of the process.

One area of research that has high potential for improving productivity is in-mine processing. Bleifuss explained how a continuous conveyor belt system could take rock from blasting to a jaw crusher, then to magnetic separation of three-inch pieces, and finally to a high-pressure impact crusher that would yield one-inch magnetic ore pieces for transfer out of the mine to a processing plant for concentration and pelletization; waste would be left in the mine. He also discussed projects studying low-intensity-matrix magnetic separators to reduce the silica content of taconite pellets; a vertimill stirred-ball mill to improve the efficiency of current ball mills, in which less than 5 percent of the electrical consumption actually crushes rock; a density classifier to improve fine-particle sizing; and column flotation techniques for concentrating magnetic ore.

"There are no simple solutions," Bleifuss said, noting that many new technologies have been proven to the extent possible in laboratory situations, and that it will take substantial R&D and capital investments by companies to implement new technologies. Commenting on direct-reduced iron (DRI) milling as a potential way of adding value to the Iron Range's taconite ore product, he suggested that the focus stay on the expensive and complex challenges of improving taconite ore production. "DRI is almost an irrelevant distraction," he said. "Minnesota has four resources to succeed with: taconite deposits, the technical ability to make high-grade concentrate, a capable work force, and a commonality of purpose."

Minnesota's future role as a supplier of high-quality pellets to a changing iron and steel industry was discussed by Joseph Poveromo, director of international technology for Quebec Cartier Mining Company in Montreal. He said the future depends on the changing share of iron production by traditional blast furnaces, electric arc furnaces, and mini-mills that use recycled scrap and DRI or other processes. "There is plenty of business now," he said, "but what happens with the next downturn in the industry? There are no new blast furnaces being built in North America. Can Minnesota taconite ore compete with foreign suppliers of ore to electric arc furnaces," which can use recycled iron in place of taconite pellets? Poveromo asked. He suggested that Minnesota look into the feasibility of developing electric arc furnace ironmaking capability.

Richard Schultz, director of ironmaking technology for Cleveland Cliffs, Inc., in Cleveland, Ohio, agreed with Poveromo that Minnesota's iron-ore industry must look beyond the current blast furnace customer to the iron customers of the future. He narrowed Minnesota's challenges to three areas: (1) develop a cost-effective, low-silica

flowsheet, (2) find a way to cost-effectively eliminate sulfur and coal ash from the final product, and (3) become an iron-maker, either by producing pig iron or by developing a cost-effective reduced iron system suitable for a Minnesota location.

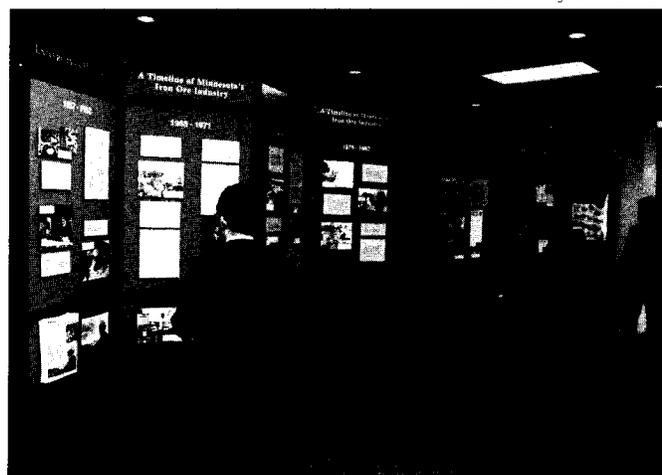
Minnesota Mining—A National Resource

Closing comments for the conference were provided by Eighth District Congressman James Oberstar, speaking by satellite from Washington, D.C. He said that keeping Minnesota's iron-ore industry healthy is not only a state issue, it is a national issue. "The United States consumes 75 percent of the world's mineral production, and each year we import \$44 billion of nonfuel minerals, including 100 percent of our manganese." Minnesota's continued ability to meet most of the domestic demand for iron ore and to apply research on pelletization of manganese to cut down on imports are crucial to national security and to the balance of trade, he said. "Research is key to keeping Minnesota's iron-ore industry cost effective."

Oberstar closed by encouraging participants to join him in fighting Republican efforts to abolish the U.S. Bureau of Mines. He said Democrats support President Clinton's proposed reduction of the bureau's budget, but not its elimination. For an annual investment of about \$132 million, the bureau produces billions of dollars in economic activity, he said, noting specific research projects in which a couple of million dollars of research and development work led to new ventures employing hundreds of people and generating billions in new revenue. Oberstar also noted the bureau's collaboration with the University of Minnesota to pelletize magnesium from Minnesota's Cuyuna Range for potential use as a reducer of smokestack sulfur emissions that cause acid rain.

by Michael P. Moore

Photo: Nancy G. Johnson



"A Timeline of Minnesota's Iron Ore Industry" was one of several exhibits displayed at the conference.

Local Scholarly Conferences in May

Transportation Research Conference

A forum for researchers and practitioners from the Upper Midwest. Over 50 concurrent sessions in economics, environment, safety and traffic flow, infrastructure, and human and community issues. Four "preconference" workshops on May 1.

Monday through Wednesday, May 1-3

Sheraton Park Place Hotel, western Minneapolis

Sponsored by the UM Center for Transportation Studies

For information call Lori Graven, 612/625-9023, lgraven@pdc.cee.umn.edu

Contemporary Brazil: The Transnational and Post-Colonial Condition

Presentations in English and/or Portuguese.

Free registration to UM faculty, staff, and students.

Thursday through Saturday, May 11-13

Nolte Center, East Bank

Sponsored by UM Brazilian Studies Association

For information call Nancy Grubb, 612/625-6358, ngrubb@mail.cee.umn.edu

The Women, Gender, and Science Question: What do research on the history of women and science, and research on science and gender have to do with each other?

The 90 presenters are historians, philosophers, scientists, sociologists, educators, administrators. They will explore how the science culture includes gender bias in scientific practice and content, and how that phenomena has functioned in different times and places. Roundtables and informal discussion events will encourage participation by attendees.

Friday through Sunday, May 12-14

East Bank and St. Paul campuses

Sponsored by University of Minnesota

For information call Susan Burke, 612/625-3530, sburke@mail.cee.umn.edu

Foreign Language Across the Curriculum Workshop

To help university and college teachers in most disciplines develop foreign-language components in their courses. Workshop leaders include Marjorie Wesche, University of Ottawa; Carol Klee, University of Minnesota; and Wendy Allen, St. Olaf College. The days before and after the workshop, attendees are encouraged to observe foreign language classes at the University.

Thursday through Saturday, May 18-20

West Bank Union

Sponsored by UM Institute of International Studies

For information call Nancy Grubb, 612/625-6358, ngrubb@mail.cee.umn.edu

University, Industry Lab Costs Comparable

The costs of doing research in university and industry laboratories are similar, except that industry spends slightly more on facilities, according to the Government-University-Industry Research Roundtable.

In industry and universities, the direct costs of doing research—i.e. expenses incurred at the laboratory and department level—are 78 percent and 80 percent respectively. The costs of research facilities average 21 percent in industry and 15 percent in universities. The remaining costs, 1 percent and 5 percent, respectively, come from central corporate or institutional expenses.

The Roundtable suggests three causes for the difference in facilities costs: 1) At corporate facilities, all of the expense is accounted to research, while at universities, research facilities share expenses with other functions. 2) Industrial research tends to be more applied research, which is more expensive. 3) Industry facilities are accounted to depreciate more rapidly.

From Washington Fax

Gingrich on Science Funding

The United States needs to spend a greater portion of its budget on research and development, House Speaker Newt Gingrich told the D.C. Science Writers' Association on March 8. Budget restructuring, he said, could both balance the budget and provide greater investment in science.

The private sector would increase its investment in basic research, Gingrich also said, if the R&D tax credit were expanded and the capital-gains tax were reduced.

Gingrich and Bob Walker, chair of the House Science Committee, also spoke of the following:

- A tax credit that would encourage industry to build research facilities in partnership with universities.
- A U.S. Department of Science that combines the science programs of the NSF, the Departments of Energy and Commerce, and the Environmental Protection Agency.
- Placing more of the big federal projects with private contractors, and doing big science with international cooperation.
- Large cuts in federal funding for applied or "strategic" research, especially the Advanced Technology Program of the Department of Commerce and the Technology Reinvestment Program of the Department of Defense.

From Washington Fax

National Science Foundation

Environmental Decision-Making Research Center

In FY95 the National Science Foundation intends to establish a National Environmental Decision-Making Research Center for the purpose of improving the scientific basis for government decision-making on the environment. The Center will have an interdisciplinary focus and must include a component that synthesizes research results from a variety of sources for use by environmental policy makers and the private sector.

NSF and other agencies that support environmental research would benefit from improvement in the following functions:

- agenda setting for federal environmental research that is informed by actual needs of decision makers—including representatives of industry;
- information management and the synthesis of knowledge from information;
- closing the loop between research and the use of research findings.

Enhancing the performance of these functions will be the primary purpose of the National Center for Environmental Decision-Making Research. To improve agenda setting, applicants might wish to devise research mechanisms that will help answer such questions as:

- who are the decision makers?
- what do they need to know?
- when do they need to know it?
- in what form and with what confidence limits do they need the knowledge?
- what research questions derive from these needs?

To enhance information management and knowledge synthesis, applicants might devise research strategies to address:

- what analyses and approaches are necessary?
- what are the shortcomings of our current approach to managing environmental information so that it is credible and readily available?
- how can we increase the understanding and effectiveness of environmental problem-solving, information processing, and decision making by individuals and organizations?

- at what levels of aggregation should environmental issue-related information be synthesized?
- can risk and valuation analyses be used to help set priorities among the syntheses?
- what rules should be put in place to ensure the credibility of the process.

Finally, to help close the loop between research and knowledge use, applicants might suggest research and educational activities that would seek to answer such questions as:

- how can decision makers be helped to understand the limits of environmental science and engineering as well as its capabilities?
- how can environmental scientists and engineers learn the processes by which policies are established, management decisions made, and industrial choices defined?
- how can environmental scientists and engineers be helped to communicate information and knowledge to those involved in these processes?

The center can involve a single academic institution, a consortium of universities, a national laboratory, a private sector institute, or a consortium of any of these organizations.

The center's organization should ensure flexibility, allowing it to maximize its capabilities and to deal effectively with the range of critical environmental issues. It should spearhead efforts to define environmental problems that have been difficult to solve because of information barriers, and foster research to remove these barriers. It may contain an education and training component that may include such activities as fostering public forums and encouraging exchanges between environmental science professionals and environmental managers and policy makers.

It is anticipated that funding will be \$1 million per year for up to five years.

The application deadline is **May 1, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to go-pher@ortta.umn.edu. For further information contact C. Neal Tate, Division of Social, Behavioral and Economic Research, NSF Room 995, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1762; fax 703/306-0485; e-mail ctate@nsf.gov.

■ U.S. Army Research Office Scientific Foundations of Image Analysis

The United States Army Research Office (USARO) announces the competition for a university-based research center on the scientific foundations of image analysis. The long-term goal of the center is to develop the fundamental underpinnings of object recognition. The center will serve as a focal point for the science of image analysis and will act as an interface between the Army and the university community.

Required capabilities center around high-probability object detection, recognition, classification, identification, and a low probability of false alarms. These requirements are exacerbated by the need for robust operation in scenarios which often have highly cluttered backgrounds.

The numerous Army tactical considerations and the breadth of Army mission requirements result in a wide variety of target and background situations for target acquisition scenarios. The various target and background situations arise from a number of considerations including noisy scenes, occlusion, wide ranges of contrast and resolution, camouflage and deception, obscuration, target-like clutter, and a number of very different prevalent weather conditions. A further complication implicit in Army requirements is the need to operate from small platforms such as the soldier system, land-based vehicles, and rotorcraft.

Advances in image processing capabilities will also impact a number of non-DoD applications. Examples include automatic face recognition for security applications, such as screening passengers for terrorists, automatic finger print classification and identification, robotic assembly lines, medical image processing, and collision avoidance systems for vehicles and aircraft.

Conventional implementations of image processing systems consist of three components: sensors, processors, and models. Currently, for most scenarios and systems, the performance of image analysis systems is limited by the algorithms and models, rather than the sensors or processors. Consequently the focus of this center will be to explore new algorithm and model concepts with approaches based on sound theoretical underpinnings. In addition, the consideration of unconventional approaches such as preprocessing as an intimate part of detection, the use of other novel sensors, and sensor fusion approaches are strongly encouraged.

Eligibility is open to all universities and educational organizations that are qualified to perform research. The formation of consortia involving several universities and industry is en-

couraged, but not required. It is required that each proposal include a Historically Black College/University or Minority Institution (HBCU/MI) among its research performers. The HBCU/MI must receive at least 5 percent of the total requested funding.

USARO plans to make one fully funded FY95 award. The initial increment will be funded for a 12-month period at a level not to exceed \$1.5 million.

The application deadline is **April 27, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to go-pher@ortta.umn.edu.

■ NICHD

Research on U.S. Immigration

The Demographic and Behavioral Sciences Branch, Center for Population Research, National Institute of Child Health and Human Development (NICHD), invites qualified researchers to submit applications for research project grants (R01) and First Independent Research Support and Transition (FIRST-R29) awards on immigration to the United States. For the purposes of this program announcement, an immigrant is a foreign-born person who enters the United States without U.S. citizenship.

The large number of immigrants in the past two decades may have already had a major impact on the social and economic structure of the United States. Especially in recent times, public policy and scientific debates about immigration have focused on the estimation methods used to count the numbers of immigrants and emigrants, and the effectiveness of public policies in dealing with the impact of immigrants, particularly their contributions and costs to society.

The purpose of this program is to encourage: 1) development of methodological research tools for measurement and analysis of immigration and emigration; 2) descriptive and analytical study of immigrant populations, particular immigrant children and families; 3) maximum use of existing data on immigrants or the foreign-born for analyses, and the linking of such data to administrative records on, for example, program and welfare use, to obtain a more accurate profile of immigrant experiences; and 4) the collection of new longitudinal and panel data to examine issues such as the health, socioeconomic status, and resilience of immigrants, as well as intergenerational transmission of skills and resources.

{Next Page}

The program seeks to encourage the use of a variety of approaches found in the social and behavioral sciences to address immigration issues. These approaches may include, for example, descriptive studies on immigrant subpopulations (e.g., undocumented immigrants, refugees, border populations); empirical tests that systematically test the validity of competing theories of international migration; the use of formal demography in the development of methodological research tools for measurement and analysis of immigration and emigration flows, as well as mortality and fertility differentials among immigrant groups; simulation modelling and other approaches for the development of a scientific body of knowledge to assess how variation in immigration policy and procedure impinges on the immigrant population or on society at large; causal modelling to examine the determinants and consequences of immigration for individuals, the family, and/or society; epidemiological studies to explore patterns and incidence of health conditions among immigrant populations.

This is an ongoing program with annual deadline dates of **February 1, June 1, and October 1**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Refer to PA-95-036. For further information contact Rose Maria Li, Demographic and Behavioral Sciences Branch, NICHD, 6100 Executive Boulevard, Room 8B13, Bethesda, MD 20892; 301/496-1174, fax 301/496-0962; e-mail LiR@HD01.nichd.nih.gov.

■ Environmental Protection Agency Socioeconomic Projects Related to Pollution Prevention

The U.S. Environmental Protection Agency seeks proposals to conduct socioeconomic initiatives related to pollution prevention—i.e., projects focused on policy reforms, opportunities for building innovation capacity, and diffusion of innovative prevention technologies.

EPA's interests in this instance are clearly distinct from conventional socioeconomic research and development. That is, they go beyond study and analysis of issues to applications of existing knowledge in pioneering attempts to effect social or institutional change with respect to promoting development and implementation of innovative technology.

Grants are intended to finance prevention-related projects supporting policy analysis (frameworks), institution building (innovation capacity), and domestic and international diffusion.

Policy-framework topics of interest include 1) strengthening incentives for the development and use of innovative prevention technologies, and 2) identifying and reducing barriers to innovation. Aspects to be addressed include regulations and implementation mechanisms (e.g., permitting and compliance policies and programs).

Innovation capacity proposals should be focused on how to assist or catalyze prevention-technology development and commercialization efforts. Examples of possible work in these areas are programs or projects to 1) establish programs to standardize testing protocols and verify the cost and performance of innovative prevention technologies; 2) provide pollution prevention technology testing centers; 3) catalyze the efforts of many organizations to promote innovation by convening partnerships; and 4) develop and communicate timely information about high-priority prevention technology gaps.

Proposals on diffusion of information should focus on new and improved means of fostering information networks, technical assistance, and outreach activities. Both domestic and international applications are encouraged. For example, there is a need to enhance the capacity of existing or newly created public and private diffusion activities to serve the potential users of pollution prevention technologies both domestically and abroad. Proposals may include activities relating to market demand, availability, cost, performance, opportunities for business development, and regulatory requirements.

EPA is directing approximately \$3.5 million this fiscal year in awards. Proposals averaging \$150,000 per year for a maximum of 2 years are requested. All recipients are required to provide a minimum of 1 percent of the total project costs, which may not be taken from federal sources.

The application deadline is **May 1, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact the U.S. Environmental Protection Agency, Office of Exploratory Research (8703), 401 M Street SW, Washington, DC 20460; 202/260-7474, fax 202/260-0211.

Program Information

NIST

Advanced Technology Program

The National Institute of Standards and Technology (NIST) Advanced Technology Program has announced three new competitions under its focused programs: Digital Data Storage, Digital Video in Information Networks, and Manufacturing Composite Structures. The announcements appeared in the March 1 edition of *Commerce Business Daily*.

Deadlines for full proposals are **May 9, 1995**, for Digital Data Storage; **May 12, 1995**, for Digital Video in Information Networks; and **May 24, 1995**, for Manufacturing Composite Structures. Further details on these competitions and the focused programs, as well as proposal preparation kits may be obtained from the ATP office. Call 800/ATP-FUND (287-3863) or send e-mail to atp@micf.nist.gov. Information about ATP competitions also is available from the NIST gopher by telnetting to gopher-server.nist.gov and logging in gopher at the prompt.

ATP provides cost-shared support to individual companies or joint ventures to develop promising, but high-risk, enabling technologies that are potentially important to U.S. economic growth. It does not support product development. Competitions under the ATP focused programs are restricted to those technologies that support the published goals of each program.

New Deadline for Component-Based Software Proposals

NIST's Advanced Technology Program has announced a change in the deadline for proposals for the focused program competition in Component-Based Software. Optional pre-proposals are now due no later than 3 p.m. Eastern time on Wednesday, **April 26, 1995** (not April 5), and full proposals must be received no later than 3 p.m. Eastern time on Wednesday, **May 31, 1995** (not May 17). All other details of this competition remain the same as published in the February 13 *Commerce Business Daily* notice. The new deadlines were published in the March 3 *Commerce Business Daily*.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
February 1995	405	\$ 74,927,454
Awards Processed		
February 1995	179	20,267,886
Proposals Submitted		
July 1994 - February 1995	2,837	461,777,959
Awards Processed		
July 1994 - February 1995	2,756	299,108,300
Proposals Submitted		
July 1993 - February 1994	2,921	433,088,360
Awards Processed		
July 1993 - February 1994	2,027	175,975,357

Gene Expression in *Cryptosporidium*-Infected Host Cells

Mitchell Abrahamsen, Veterinary Pathobiology
NIH, NIAID
\$99,550 - 01/01/95-12/31/95

Alcohol Policy Effects on Violence and Injury Mortality

Alexander C. Wagenaar, Epidemiology
NIH, NIAAA
\$251,316 - 01/01/95-12/31/95

Scarce Medical Services Contract - Psychiatry

Paula J. Clayton, Psychiatry
Veterans Administration
\$164,195 - 01/01/95-09/30/95

Human Diabetic Skin Fibroblast Integrin Receptor Expression

Alfred J. Fish, Pediatrics
American Diabetes Association, Inc.
\$50,000 - 01/01/95-12/31/95

Gene Therapy for Metabolic Disorders

Chester B. Whitley, Pediatrics
NIH, NICHD
\$695,012 - 01/10/95-12/31/95

Uveoretinitis - Treatment with Oral Antigen

Dale S. Gregerson, Ophthalmology
NIH, NEI
\$160,374 - 02/01/95-01/31/96

Platelet Utilization UMHC and Twin Cities

Daniel J. Weisdorf, Medicine
J. Jeffrey McCullough, Laboratory Medicine and Pathology
Amgen
\$61,062 - 12/01/94-11/30/95

Immunotherapy with IL-2 for Patients with Advanced-Stage Breast Cancer

Jeffrey Miller, Medicine
Applied Immune Sciences, Inc.
\$101,665 - 10/01/94-09/30/95

An Ethical Numerical Weighting Scale

Marilyn Bach, Laboratory Medicine and Pathology
Charles N. Oberg, Pediatrics
Cynthia Gross, Pharmacy Practice
Medica Foundation
\$25,000 - 01/01/95-12/31/95

{Next Page}

Hereditary Ataxia: Molecular Genetics and Pathophysiology

Harry T. Orr, Laboratory Medicine and Pathology
Richard W. Price, Neurology
Dennis M. Livingston, Biochemistry (Med)

NIH, NINDS
\$780,780 - 01/01/95-12/31/95

Regulation of Neuropeptides and Receptor Functions

Horace Loh, Pharmacology
Nancy Lee, Pharmacology

NIH, NIDA
\$345,531 - 02/01/95-01/31/96

Development of Databases Related to Underground Facilities Design

Raymond L. Sterling, Underground Space Center
Samsung Electronics Co., Ltd., Korea
\$28,401 - 03/01/95-12/01/95

Correlated Electron Transport in Mesoscopic Structures

Leonid Glazman, Physics and Astronomy
National Science Foundation
\$60,000 - 02/01/95-01/31/96

Hydraulic Flume Testing on Conlock I and II Erosion Control Blocks

Richard L. Voigt, Jr., Saint Anthony Falls Hydraulic Laboratory
Hydro-Turf and Associates
\$25,000 - 02/01/95-04/01/95

Data Analysis from the WAVES Experiment

Paul J. Kellogg, Physics and Astronomy
Keith Goetz, Physics and Astronomy
National Aeronautics and Space Administration
\$289,995 - 01/01/95-12/31/95

Undergraduate Research Experience in Physics and Astronomy

Kenneth J. Heller, Physics and Astronomy
Charles E. Campbell, Physics and Astronomy
National Science Foundation
\$53,000 - 02/15/95-01/31/96

Microcontamination Research Consortium

Benjamin Y. Liu, Mechanical Engineering
David Y. Pui, Mechanical Engineering
Particle Measuring Systems, Inc.
\$70,000 - 01/01/95-12/31/97

Semitractor-Trailer Testbed for the Investigation of Vehicle Guidance

Max Donath, Mechanical Engineering
St of MN, Department of Transportation
\$28,000 - 09/15/94-09/30/95

Research Experience for Undergraduates (REU)

D. Fennell Evans, Chemical Engineering and Materials Science
Karl A. Smith, Civil and Mineral Engineering
National Science Foundation
\$1,622,178 - 10/01/94-09/30/95

Isotope Sedimentology of 40Ka Time-Series from Iberian Sites as a Test of Abrupt Arid/Humid Switching within the Mediterranean Climate Zone

Kerry Kelts, Geology and Geophysics
National Science Foundation
\$57,622 - 02/01/95-01/31/96

Collaborative Research: Direct Observation of the Mechanisms of Friction at a Single Asperity on Mineral Surfaces

David Kohlstedt, Geology and Geophysics
USDI, Geological Survey
\$48,545 - 02/01/95-01/31/96

Mechanisms of Biosynthetic Formation of Deoxy Sugars

Hung-Wen Liu, Chemistry
NIH, NIGMS
\$292,728 - 01/01/95-12/31/95

Common Platform: Distributed Shared Memory Multiprocessor

Gyungho Lee, Electrical Engineering
Samsung Electronics Co., Ltd., Korea
\$200,000 - 11/19/94-11/19/96

Reassessment of Diametral Compression Test on Asphalt Concrete

Andrew Drescher, Civil and Mineral Engineering
David E. Newcomb, Civil and Mineral Engineering
St of MN, Department of Transportation
\$49,984 - 09/15/94-03/31/96

Development of Design Criteria Against Earthquake Forces for Low-Rise Structural Systems with Steel Joists

Theodore V. Galambos, Civil and Mineral Engineering
Steel Joist Institute
\$35,000 - 02/01/95-01/31/96

Release Methodology of Prestressed Strands

Catherine E. French, Civil and Mineral Engineering
Roberto Leon, Civil and Mineral Engineering
Jerome F. Hajjar, Civil and Mineral Engineering
St of MN, Department of Transportation
\$35,055 - 11/15/94-03/31/96

An Asphalt Paving Tool for Adverse Conditions

David E. Newcomb, Civil and Mineral Engineering
V. R. Voller, Civil and Mineral Engineering
Andrew Drescher, Civil and Mineral Engineering
St of MN, Department of Transportation
\$250,000 - 12/27/94-12/31/97

High-Energy Density Lithium/Polymer Rechargeable Batteries

Thomas R. Hoyer, Chemistry
H.V. Setty Enterprises, Inc.
\$23,240 - 12/06/94-06/06/95

Site-Specific Hydrolysis of DNA and RNA by Metal-Peroxy Complexes

Lawrence Que, Jr., Chemistry
NIH, NIGMS
\$157,288 - 12/01/94-11/30/95

Reactive Compatibilization of PDMS - Polymer Immiscible Blends

Chris Macosko, Chemical Engineering and Materials Science
Dow Corning Corporation
\$50,000 - 01/01/95-12/31/95

***S. sanguis* Modulates Tolerance in Murine Arthritis**

Mark C. Herzberg, Preventive Sciences
Massimo Costalonga, Preventive Sciences
NIH, NIDR
\$35,000 - 02/01/95-01/31/96

Postmenopausal Estrogen Deficiency and Tooth Loss

Stephen K. Shuman, Preventive Sciences
Mary E. O'Connell, Pharmacy Practice
NIH, NIDR
\$46,920 - 02/01/95-01/31/96

Oral Surgery and Initiation of Neurogenic Inflammation

James Q. Swift, Diagnostic Surgical Science
Kenneth M. Hargreaves, Restorative Sciences
NIH, NIDR
\$229,115 - 02/01/95-01/31/96

Science in the Classroom: Food Chemistry

Hertha Schulze, Center for Interfacial Engineering
Linda J. Brady, Food Science and Nutrition (Agr)
St of MN, Higher Education Coordinating Board
\$30,488 - 11/10/94-02/09/96

Cloning of Plant Accase Gene

Burle G. Gengenbach, Agronomy and Plant Genetics
BASF Corporation
\$55,200 - 09/01/94-08/31/96

Regulation of Kernel Cytokinin Levels in Response to Heat Stress in Heat-Tolerant and Heat-Susceptible Maize Lines

Robert J. Jones, Agronomy and Plant Genetics
Beth Schreiber, Agronomy and Plant Genetics
Pioneer Hi-Bred International, Inc.
\$50,800 - 01/01/95-12/31/96

Recombinant Inbred Soybean Populations

James H. Orf, Agronomy and Plant Genetics
University of Utah
\$30,410 - 02/01/95-01/31/96

International Trade Agreements and Domestic Policy Reform

Terry Roe, Agricultural and Applied Economics
Virginia Polytechnic Institute and State University
\$25,000 - 09/01/94-08/31/96

Mechanisms of Patch Maintenance in Old-Growth Forests

Peter B. Reich, Forest Resources
Michael B. Walters, Forest Resources
Lee E. Frelich, Forest Resources
National Science Foundation
\$90,000 - 03/01/95-02/29/96

Impact of Vertical Integration on Utilization of Hardwood

James L. Bowyer, Forest Products
USDA
\$17,482 - 01/01/95-09/30/95

Advancing the Academic Journey: Faculty Development Fellow

Frank Wilderson, Educational Psychology
U.S. Department of Education
\$342,144 - 01/01/95-12/31/95

Developing an Evaluation for Pillsbury Neighborhood Services

Jean King, Educational Policy
Deb Hole, Educational Policy
Pillsbury Neighborhood Services
\$29,970 - 01/11/95-12/31/95

Extending Mathematical Leadership in the Twin Cities Metropolitan Area—Phase III

Thomas R. Post, Curriculum and Instruction
St of MN, Higher Education Coordinating Board
\$40,350 - 12/01/94-02/09/96

Neurophysiologic Assessment of At-Risk Newborns

Charles A. Nelson, Institute of Child Development
Michael Georgieff, Pediatrics
Raye-Ann De Regneir, Pediatrics
NIH, NINDS
\$198,579 - 01/01/95-12/31/95

Reintroduction of Soil Mycorrhizae into Roadside Prairie Planting

Iris Charvat, Plant Biology
St of MN, Department of Transportation
\$25,000 - 10/17/94-08/31/95

Replications and Segregation of Basal Bodies in *Chlamydomona*

Carolyn D. Silflow, Genetics and Cell Biology
NIH, NIGMS
\$189,342 - 02/01/95-01/31/96

Evaluation of Lysine by Mutants of *Bacillus MGA3*

Kenneth Valentas, Biological Process Technology Institute
Sota Tec Fund
\$60,000 - 12/01/94-02/28/95

Spectroscopic Studies of Light-Driven Electron Transfer

Bridgette Barry, Biochemistry (CBS)
NIH, NIGMS
\$210,609 - 01/01/95-12/31/95

Manufacturing Marketing Assistance Program

Kjell R. Knudsen, Center for Economic Development, Duluth
Mark Mueller, School of Business and Economics, Duluth
Minnesota Project Innovation, Inc.
\$15,000 - 01/01/95-03/31/95

Mississippi River and St. Louis River Sediment Assessments

Keith B. Lodge, Natural Resources Research Institute, Duluth
Richard Axler, Natural Resources Research Institute, Duluth
St of MN, Pollution Control Agency
\$231,467 - 02/02/95-12/30/95

Structure and Function of Regional Landscapes II

George E. Host, Natural Resources Research Institute, Duluth
University of Wisconsin, Madison
\$41,807 - 12/01/94-05/31/95

Annual U.S. Steel Research Budget - FY 1995

Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Thys B. Johnson, Natural Resources Research Institute, Duluth
U.S. Steel Corporation
\$446,250 - 01/01/95-12/31/95

Cost and Benefits of Cleaning Up Contaminated Sediments in Great Lakes Areas of Concern

John R. Ludwig, Natural Resources Research Institute, Duluth
Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Great Lakes Protection Fund
\$57,000 - 01/01/95-12/31/96

Studies on Avian Cytokines

Jagdev Sharma, Veterinary Pathobiology
Kemal Karaca, Veterinary Pathobiology
Syntro Corporation
\$159,496 - 07/01/94-06/30/96

Choosing Well: Ethics for a New Health Care System

Dianne M. Bartels, Medical School
Steven H. Miles, Medicine
Medica Foundation
\$54,336 - 07/01/94-06/30/95

Microcontamination Research Consortium

Benjamin Y. Liu, Mechanical Engineering
David Y. Pui, Mechanical Engineering
TSI, Inc., and 3M
\$100,000 - 01/01/94-12/31/96

Parallel Scalable Libraries for Large-Scale Applications

Ahmed Sameh, Computer Science
Linda Petzold, Computer Science
Youcef Saad, Computer Science
USDOC, NIST
\$451,661 - 05/15/94-05/14/95

Center for Filtration Research

Benjamin Y. Liu, Mechanical Engineering
Kenneth L. Rubow, Mechanical Engineering
TSI, Inc.
\$10,000 - 01/01/95-12/31/95

Radon School Training and Radon Measurement Training Courses

William J. Angell, Design, Housing, and Apparel
St of MN, Department of Health
\$13,740 - 11/01/94-03/31/96

Collaborative Study of Minnesota's Teaching Residents

Jean King, Educational Policy Studies
St of MN, Board of Teaching
\$14,400 - 11/30/94-06/30/95

Planning for School-to-Work Opportunities

Robert H. Bruininks, Educational Psychology
Laura Bloomberg, Education
St of MN, Department of Education
\$42,000 - 07/01/94-06/30/95

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael P. Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry/Food Companies/3M (HS excl Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Am Heart, Business/Industry Food Companies/3M (Med Sch only)	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Voluntary Health	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	TBA	626-8267	
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Account Number Assignment, Documents	Todd Morrison	624-5066	todd@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDA, Ag Associations	Amy Levine	626-7441	amy-l@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Virginia Olson	624-0288	ginny@ortta.umn.edu
DOD, DOE, NASA, NRC	Debra Elvine	624-5571	deb@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Susan Stensland	625-3515	stensland@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Liz Dawson	624-2521	liz-d@ortta.umn.edu
NSF (IT), MINDOT, EPA			
Patents and Technology Marketing - Information		624-0550	
Director, Technology Licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	William Rosenberg	624-9568	bill@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-9293	laurel-h@ortta.umn.edu
Director, Technology Licensing (Health Sciences)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Technology Licensing	Michael F. Moore	624-9531	michael@ortta.umn.edu
Technology Licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Assistant Director, Trademark and Software Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Transfer Coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	Rachel Surber	624-2040	rachel@ortta.umn.edu
Effort Help Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Marjorie Morris			
Grants Development	Tom Mahoney	612/589-6465	mahoneyt@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! It is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For non-AIS labels only, please send the following:

Change	<input type="checkbox"/>	Name: _____
Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Address: (Campus Bldg, Rm #) _____
		City, State: (if off-campus) _____

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RESEARCH REVIEW

Office of Research and Technology Transfer

May 1995

“Seat Time” is on the Way Out

Minnesota High Schools Rewriting Graduation Standards

Most people who enter the University as first-year undergraduates are selected by the admissions office according to their national test scores, their rank among their high school classmates, and their “seat time” in certain high school courses. Entering students, say admission requirements, must have taken at least four years of high school English, three each of math and science, and two each of social studies and a foreign language; new requirements in art and geography take effect in fall 1997. But in most high schools, says the common criticism, to take a course means to sit through it; students put in their “seat time” and they graduate, no questions asked.

The University Senate is not entirely happy with seat time as a predictor of new students’ success, but the alternatives have problems too. People tend to associate many of them with *Outcome Based Education* or *OBE*, an approach that has spent the last several years earning the enmity of parents, teachers, students, and school boards. The Rosemount-Eagan-Apple Valley school district, for example, tried OBE in 1992-93, then rejected it in a loud uprising led by the parents—or perhaps it was something else they rejected, after mislabelling it OBE. Because of OBE’s reputation, anyone working to replace seat-time standards seems compelled to either duck attention as much as possible, or work constantly to distinguish between the unpopular approach, *outcomes based education*, and their approaches, sometimes unfortunately named *outcome-standards* or *outcome-based accountability*. The University Senate prefers the term *competency standards*.

The confusion falls most heavily on the Minnesota Department of Education and every Minnesota public high school, which are in the process of replacing seat-time standards with the “Minnesota State Graduation Rule.” The process was mandated by the 1993 legislature, which wrote, “The state board [of education] shall use its rulemaking authority to adopt a statewide, results-oriented graduation rule to be implemented starting with students beginning high school in 1996.”¹ The Minnesota Department of Education, along with schools and teachers from Lake of the Woods to Montevideo, have been drafting high school graduation



Kyla Wahlstrom, associate director, Center for Applied Research and Educational Improvement.

Inside

Electronic Templates	2
Phase Two of Grants Management Project Nearing Completion	3
The Importance of Properly Documenting Your Research.	4
Human Subjects: Payments to Research Subjects	6
Chinese Ceramist Expands the Art of the Electric Kiln	7
Budget Establishment in CUFS.	11
Assistant VP Surbey Leaving University	12
New Grant Administrator	12
Holdings of Research Libraries in U.S. and Canada.	12
Graduate School News	13
Symposia, Workshops & Conferences in June	14
Program Information	15 - 18
Faculty Research, Training, and Service Awards	19 - 21
Journal Articles by University Authors.	21 - 22

{Continued On Page 8}

Electronic Templates

Electronic templates are available on ORTTA's gopher for Effort Certification Reports and for Type 38 Journal Vouchers. They are available in both DOS and Macintosh formats, and have been approved for departmental use by ORTTA and Payroll Services, respectively.

To download the electronic templates, direct your gopher to the University of Minnesota Campus Information/Department and College Information/Office of Research and Technology Transfer/Forms & Templates. Then choose either of two directories: "Effort Certification Report—DOS Version" or "Effort Certification Report—Macintosh Version."

Within each of those two directories are files for effort reports of various lengths, for journal vouchers, and for learning how to use the templates.

For more information, please call the following:

Effort Certification Form	
ORTTA Effort Helpline	625-7824
Access Templates Electronically	
ORTTA Systems	624-9004
Type 38 Form and Format	
Payroll Helpline	624-3869

RESEARCH REVIEW

Volume XXIV/Number 11

May 1995

Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

The *predetermined* rates for July 1, 1994, through June 30, 1995, are listed below. When budgeting for periods beyond 6/30/95, the 7/1/94-6/30/95 rates should be used and are considered provisional. **The rate agreement is dated August 16, 1994**; this date should be used where required on proposal applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call **ORTTA Grant Administration, 624-5599**, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call **Marilyn Surbey, 624-4850; Doyle Smith, 626-9741; or Aubrey Gold, 626-9895**.

	07/01/94	06/30/95
Research		
On-Campus	45.00%	
Off-Campus *	24.00%	
SAFHL On-Campus	55.00%	
SAFHL Off-Campus	26.00%	
Hornell	45.00%	

Other Sponsored Activity

On-Campus	30.00%
Off-Campus *	24.00%

Instruction

On-Campus	50.00%
Off-Campus *	26.00%

* A project will be considered off-campus if more than 50% of the direct salaries and wages of personnel employed on the project are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates (as of February 1995).

	Academic	Graduate Students *	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	25.6%	33.7%	30.7%
7/1/96 - 6/30/97	26.1%	35.8%	29.1%
7/1/97 - 6/30/98	26.1%	35.8%	29.1%

* Increase the indicated rates by 7.7 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertations; or if 2) the student is employed for *more* than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call **Vivian Fickling at 624-2009**.

Rate changes will be reflected in this section.

Phase Two of Grants Management Project is Nearing Completion

Like other major research universities, the University of Minnesota faces increasing pressure to improve its accountability for sponsored program funding. At the same time, fiscal pressures constrain the resources that can be committed to grants management. Just like industry, the University must find efficient ways to increase managerial effectiveness.

James H. Roth, partner in Arthur Andersen LLP, says, "The past four years have seen a dramatic increase in government scrutiny over federally sponsored programs among research institutions. In response to these measures, most major research universities are evaluating accounting practices, internal controls, and financial systems to assess compliance with federal regulations. Actively responding to a thorough internal assessment of the contract and grant management practices is the best method for managing compliance risk."

The Office of Research and Technology Transfer Administration (ORTTA) began addressing these issues in October 1993, with a review of proposal and award processing and financial reporting. In the spring and summer of 1994, the review team presented its findings and recommendations to central and departmental administrators [see *Research Review*, July 1994, page 5]. Several changes resulted, including the hiring of a director of research administration (Fred Bentley) and streamlining of some of the proposal and award processing procedures. More fundamental needs, such as upgrades of computer systems and initiation of campuswide training programs for faculty and staff involved in sponsored research, were deferred due to financial constraints.

To identify how best to invest in the grants management infrastructure, the University hired a management consulting team from Arthur Andersen LLP to perform a diagnostic review of policies, procedures, and internal controls relating to the administration of sponsored research programs. In January 1995, the Arthur Andersen team reported its findings to the Board of Regents. Potential weaknesses were identified in five major areas: 1) financial management systems, 2) ORTTA systems and processes, 3) nonfinancial regulatory compliance, 4) written policies and procedures, and 5) training and communication.

The regents asked the Arthur Andersen consultants to work with University personnel to implement the recommendations contained in the diagnostic report. Overseeing those efforts is the responsibility of a committee consisting of the following:

Mark Bohnhorst, associate university attorney

Mark Brenner, acting vice president for research

Robert Erickson, senior vice president of finance and operations

D. Fennell Evans, professor of chemical engineering and materials science

David Hamilton, department head, Cell Biology and Neuroanatomy

Jim Infante, senior vice president for academic affairs

Gail Klatt, director of the Department of Audits

Tony Potami, associate vice president for research and technology transfer

Robert Super, associate to Office of Budget and Finance

Edward Wink, senior administrative director, Department of Laboratory Medicine and Pathology

Based on the phase-one diagnostic findings, phase two of the Grants Management Project began immediately to assess specific needs in the five areas, and to develop alternatives for enhancing the University's compliance infrastructure. Phase three, which is scheduled to begin this summer, pending Board of Regents acceptance of phase-one results and recommendations, will involve selection of alternatives and development of a detailed implementation plan.

Grants Management Project work groups are now addressing the following areas:

- System enhancements needed to improve the research management uses of CUFS and the utility of financial and informational reports provided to colleges, departments, and principal investigators.
- Policies and procedures that need revision or development, and that need to be available in written and electronic form.
- Clarification of roles and responsibilities from central administration to colleges, departments, and principal investigators.
- Review of ORTTA research administration staff structure to determine if reorganization into three teams serving each of the provostial areas would improve service to departments and principal investigators.

"Many good recommendations and suggestions have already resulted from the Grants Management Project," says Mark Brenner, acting vice president for research. "We welcome the opportunity to streamline procedures in ORTTA and to implement management systems that will improve efficiency and provide the kind of accountability expected by the University's research sponsors."

Record or Repent:

The Importance of Properly Documenting Your Research

by Grace Malilay and Ann Mueeting *

It is not uncommon to find an invention made by two different and noncollaborating inventors. Consider this scenario:

Inventor A from the U.S. conceived of a mechanical device in October 1985. Between 1986 and 1988, he worked at making the device, and in March 1989 the device was finally reduced to practice. On June 12, 1989, a patent application was filed in the U.S. Patent and Trademark Office (USPTO). Inventor B, however, conceived the same invention in the United States in June 1986, eight months *after* Inventor A. The invention was completed in July 1988 and a patent application filed in the USPTO on June 6, 1989, six days *before* Inventor A's application. The USPTO conducts a proceeding to determine who among the competing parties is the true inventor (called an interference). Who will prevail?

If the United States followed the "first to file" rule like the rest of the world, Inventor B would definitely prevail. The United States, however, operates under the "first to invent" rule.

Filing a complete patent application (called constructive reduction to practice) is not the only way of determining the earliest date of invention. Inventor A can rely on two other ways to prove he invented the device before Inventor B: (1) actually physically making or reducing the invention to practice (called "actual reduction to practice"); or (2) conceiving of the invention coupled with diligence either in filing a patent application or in actually reducing the invention to practice. In the above scenario, Inventor A's only alternative is to demonstrate that he conceived the device before Inventor B and that he diligently pursued reducing the invention to practice.

Inventor A must provide evidence to convince the USPTO that, more likely than not, he was the first to invent. Such evidence consists of the inventor's testimony corroborated by independent evidence. Without the latter, the inventor's testimony will not carry any weight. The inventor provides independent evidence in the form of witness testimony from a noninventor in addition to documentary evidence. One type of document, the laboratory notebook, therefore plays a key role in interference proceedings to help establish what was done and when it was done.

Many, if not all, researchers use laboratory notebooks to document their findings. What they may not know is how to keep good written records that will stand up under the scrutiny of the USPTO. The guidelines below may be extreme, but they assure the reliability of your records in the eyes of the USPTO.



Grace Malilay, licensing associate and patent attorney, Patents and Technology Marketing

How to Record

- Do not scribble. Write legibly.
- Do not use pencil. Use indelible ink instead. Indelible ink creates the presumption of permanence.
- Do not record data on loose-leaf paper even if it will eventually be kept in a binder. Instead, use a bound notebook with the pages already numbered. A bound notebook cre-

ates the presumption that pages are not added or removed after the fact.

- Do not tear pages from the notebook when deleting or adding data. Instead, cross out the data to be changed and explain why this is being done. Sign (or initial) and date the deletion or addition.
- Do not skip spaces or pages. Instead, record entries consecutively. Consecutive entries create the presumption of continuity. If the end of one experiment overlaps with the start of another separate experiment or if several experiments are conducted at the same time, cross-reference the pages that relate to the same experiment. If you do skip spaces or pages, draw a line through the spaces or pages skipped, and sign (or initial) and date.
- Do not use acronyms or abbreviations without explaining what they mean somewhere in the notebook.

What to Record

- Record your ideas, not just your experiments. Remember, your ideas are proof of conception. Record the idea, when

{Next Page}

you thought about the idea, and who (besides you, if anyone) thought of the idea.

- Make your records complete and self-explanatory. Ideally, each experiment should be written in the format of a scientific paper: title, purpose of study, methodology, results (both positive and negative), brief discussion of the results (including factual observations), calculations, conclusion, and plans of future experiments. Jotting down plans of future experiments is good practice because it is indicative of when the invention was conceived.
- Permanently affix, i.e. tape or paste, any raw data such as specification sheets, graphs, photographs, or computer print-outs when they are added to the notebook. Then sign (or initial) and date each entry with your signature flowing across both the added material and the notebook page.
- To avoid reiteration of the methods section, cross-reference to the page which describes the procedures that will be used.
- Include a table of contents in the front of the notebook to allow a third party to quickly review and locate the different experiments conducted.
- Certain words such as “obvious” and “abandoned” should be avoided because they have legal meaning. Never write that a result is “obvious” or that an experiment will be “abandoned.”

After recording the data, it is especially important to get experiments witnessed and to get appropriate people as witnesses. Evidentiary rules require that allegations by an inventor be corroborated by noninventors.

Who Signs:

- The person who worked on the experiments and who actually recorded the experiments in the notebook must sign and date the entries made.
- An ideal noninventor witness is a technically competent person like your colleague or graduate student who did not work on the research project, but who knows about and understands the research project. Do not presume that your technician may not be an inventor. If she or he helped conceive of the idea or helped overcome an obstacle during the course of the experiments by coming up with an idea, then that person could be considered an inventor.
- In general, avoid people who will not be able to testify about the meaning of the experiments conducted.

When to Sign:

- Ideally, witnesses should sign as soon as the experiment has been concluded. The longer the gap between concluding

the experiment and the date of witnessing, the more difficult it will be to convince the USPTO that the documentary evidence, i.e. the laboratory notebook, is credible or reliable.

What and How to Sign:

The person entering the data must sign and date every entry, including any additions and deletions. Sign every page with the words “Recorded by me _____” and the date.

The person who witnesses must sign every page with the words “Witnessed and understood by me _____” and the date.

Retention of Records

Do not allow your undergraduate or graduate students, post-doctoral associates, or visiting research fellows to remove their laboratory notebook(s) and other documents from your laboratory when they leave your laboratory. These records are a product of work and must stay on work premises.

Electronic Records

Using the computer to record your inventive activities is not a good idea because it is unclear whether the documents will be accepted legally. For now, it is best to use what already has been tested in the legal system—recording in the laboratory notebook.

Properly documenting your research is especially important in light of various changes to current U.S. law. In the example above, if Inventor B’s inventive activity took place outside the United States, Canada, or Mexico (the three North American Free Trade Act (NAFTA) countries), then Inventor A is unquestionably the first true inventor. Current U.S. law states that inventive activity outside these three countries is inadmissible evidence in proving a date of invention. However, the General Agreement on Tariffs and Trade (GATT) legislation becoming effective on January 1, 1996, will open the doors to World Trade Organization (WTO) member countries to provoke interference proceedings. Foreign companies in Europe and the Pacific Rim are therefore more likely to institute interference proceedings than in the past. By following the recommendations above, you will ensure that, if faced with an interference, you will prevail as the first to invent.

- * Grace Malilay is a licensing associate and patent attorney in ORTTA, Patents and Technology Marketing (Health Technologies). Ann Muetting, Ph.D., is a patent attorney associated with the law firm of Schwegman, Lundberg & Woessner.

Institutional Review Board: Human Subjects Committee (IRB)

Payments to Research Subjects

Paying research subjects to participate in studies can be a controversial issue in the IRB review process. There is a false assumption that regulations prohibit payments to subjects. Neither the Food and Drug Administration (FDA) nor the Office for Protection from Research Risks (OPRR) prohibits payments.

Researchers are required to disclose to the IRB any plans for reimbursing or paying research subjects for their participation in a study. That information is factored into the assessment of appropriateness of recruitment plans and into the relative risk/benefit ratio for a particular study. There are no absolute rules or formulas for the acceptability of payment plans; the IRB is required to consider the unique characteristics of a study and determine the appropriateness of payment in each case.

The IRB is required to consider whether paid participants are:

- recruited fairly,
- informed adequately,
- and paid appropriately.

The IRB must take into consideration any payment which appears to create a coercive situation—one in which subjects might agree to participate or continue participation against their better judgment. The IRB must rely on the principal investigator to assist in setting the tone for the research with every effort made to minimize the possibility of coercion and to ensure that the voluntary nature of the research participation is clearly understood by the subjects.

The consent form must clearly describe a detailed account of terms of payment and conditions under which subjects would receive partial payment or no payment, as in cases of early withdrawal from participation.

The IRB expects that researchers will prorate payment over time and pay subjects for portions of study participation in the event that a subject chooses to withdraw prior to completion. The IRB must be assured that subjects will not continue participation against their better judgment. The IRB does not object to a prorated payment plan that leaves a modest lump sum for completion, if this pay plan is thoroughly documented in the consent form.

There are some institutional guides which help define “appropriate”: The Blood Bank has standard payment amounts for plasma and other blood products. If payment is planned to defray parking charges, reasonable estimates can be developed to determine transportation burdens for subjects. Hourly rates for participation may be employed and are often based on some sense of minimum wage or equivalent payment.

Researchers reluctant to pay cash for participation have developed systems of using gift certificates or vouchers for groceries as payments. In studies where children and adolescents are the real subjects, but parents bring children to campus, a parking reimbursement or transportation payment can be made to parents and a token paid to the child-subjects in the form of small cash payments or gift certificates.

Some researchers with limited funds propose a drawing or raffle among participants. Games of chance are subject to laws and regulations separate from the research arena and are generally discouraged as a form of inducement or research “payment.”

Researchers are encouraged to work within their departments and consult colleagues to determine the standard practices in their fields and to propose plans that closely resemble their community’s standards. Questions concerning this or other IRB issues should be directed to Moira Keane, 612/624-9829, moira@ortta.umn.edu.

Research Animal Resources

“Mouse Wet Lab”

Hands-on instruction for laboratory
manipulation of mice

May 24, 10:00 a.m.

Handling
Restraint

IV tail vein injections
IP injections
Gavaging

Orbital sinus blood collection

Pre-registration is required

Call Research Animal Resources at 4-9100

A Short Course on

Responsible and Successful Conduct of Research

Wednesday, May 24, 1995

9:00 a.m. - 3:00 p.m.
(Room change to)

Mississippi Room, Coffman Union

Advance registration is necessary for lunch and course material. To register, contact the Center for Biomedical Ethics at 626-9756.

Chinese Ceramist Expands the Art of the Electric Kiln

Kangsheng Liu came to the University from China in order to combine Chinese ceramic tradition with U.S. ceramic technology. Much of her effort has gone to inventing high-temperature glazes for electric kilns.

The Chinese have a long history of innovation in ceramics. Among other things, they invented the white porcelain tableware we call "china." Electric kilns, however, are more available in the U.S. than they are in China.

In The People's Republic of China (the mainland) ceramics are typically fired with coal or wood, a rather dirty process that keeps ceramists isolated in the countryside; their kilns are not welcome in town. Electric kilns, says Liu, can make ceramics an urban industry.

Electric kilns have the further advantage of being predictable. The atmosphere inside them is precisely controllable and chemically neutral, unlike the atmosphere inside wood-, coal-, and gas-fired kilns.

Electric firing has been handicapped, however, by a lack of glazes. A wide range of glazes and colors are available for the low-temperature fires that produce terra cotta and earthenware. But sturdier ceramics, like stoneware, mean firing to at least 1,200 degrees C, what ceramists call "cone five."

At those temperatures the old glazes are too volatile, the colors unstable, and the possibilities limited.

Liu does not work at the highest temperatures, however: Firing at cone ten (1,300° C) is easier and more common, but Liu works at cone five because it is more energy efficient—which is good in the U.S. and essential in China.

So Liu has invented new, high-temperature glazes for electric kilns at cone five—800 of them so far. "Glazes the likes of which I've never seen," says Curtis Hoard, leader of the University's ceramists. "There is great texture in Liu's colors; their depth is amazing. For products of an electric kiln, her work is phenomenal."

Liu is a visiting artist in the University of Minnesota Department of Art and director of the Research Institute of Ceramic Arts at Xiamen University, on the southeast coast of China. She works closely with her husband, Yaowu Hu, an interior designer. They came to Minnesota two years ago because the University's Department of Art has a good reputation among Chinese artists, and has been exchanging people with Chinese institutions since 1984.

Liu displayed about four dozen pieces in a recent exhibit in Willey Hall. She also exhibited 176 specimens of her glazes—identically shaped and precisely numbered bricks

of stoneware arranged in neat rows, each with a different glaze. The effect was somewhat like wandering into the art supply store and realizing the range of colors that paint comes in.

But Liu's "paints" have textures and layers, as well as colors. They have porous finishes, and cracked ones, as well as smooth. The reds speak of the purples underneath. The glaze



named "floating gold" covers a reddish-brown layer with jade green, then puts faint gold streaks atop the jade. Glaze number 90-65 is olive green on top of a bright emerald; the olive layer breaks open in a random pattern, and metallic green crystals glitter from inside the cracks. There is a glaze named "leather," another "oil dots," and another that's a dead ringer for a turquoise gem.

The older plates, the ones fired with wood in China 10 years ago, have a hard, slick, glassy finish, like a new car. The newer work, from the electric kiln, is softer, more porous, less like glass and more like a reptile's skin.

While not utilitarian, Liu's sculpture is not unthinking, either. One of the important traits Liu has shown U.S. ceramists, says Hoard, is "a more conscious approach to design, a sophisticated, deliberate approach. An American student more or less shoots from the hip, works by trial and error. Liu's work is stylized, formalized." Liu's deliberateness shows, says Hoard, in the "phenomenal" amount of research that went into the glazes before Liu produced much finished sculpture.

"American ceramists have few glazes to work with," says Liu. So she is now writing the book that will make her "Chinese-American glazes" more widely available.

By Phil Norcross

standards ever since. They call the standards “work in progress;” people responsible for college admissions call them “a moving target.”

“There’s an awful lot of confusion out there,” says Kyla Wahlstrom, associate director of the University’s Center for Applied Research and Educational Improvement (CAREI). “The state graduation rule is *not* outcome based education. It is a separate system. But it’s complicated because it has so many interrelated parts. It will require widespread discussion to bring this to the public.”

Wahlstrom is to K-12 schools what an extension specialist is to farms. She and the rest of CAREI link the schools with the faculty of the College of Education and Human Development.

“The state graduation rule is not outcome based education. It is a separate system. But it’s complicated because it has so many interrelated parts. It will require widespread discussion to bring this to the public.” — Kyla Wahlstrom

They seek out what works in individual schools, conduct related research, then spread that wisdom to other schools. Wahlstrom herself spent 20 years in Twin Cities elementary schools, chiefly in special education. She was an assistant director of special education in North St. Paul when she earned a doctorate in educational policy from the University in 1990. Her specialty is organizational change, precisely what the Minnesota high schools have tackled—big time.

The current draft of the graduation rule says a Minnesota high school student must demonstrate “basic competency” in reading, mathematics, and writing; must demonstrate “basic knowledge” of science, government, geography, and physical health and safety; and must demonstrate—“with achievement scored against a high standard”—academic work in ten “elements,” the so-called “profile of learning.” The elements include, for example, *Understanding the processes and meaning of artistic expression*, *Applying mathematical concepts to solve problems*, and *Applying informed decision-making processes to promote personal growth and the well-being of society*.

Each of the profile’s ten elements is further broken down into specific “standards”: The art element includes *Standard 3.6.1, Demonstrates understanding of the elements of an art form through artistic process and presentation*. The decision-making element includes *Standard 8.2.1, Analyzes decisions regarding personal wellness based on scientific under-*

standing of the human body. Some of these 64 standards are mandatory; some come in sets labeled “choose one.”

The standards’ numbers are an indexing system: *3.6.1* means third element, sixth discipline (arts), first standard. Because it doubles as a standard in the third discipline (language arts), standard 3.6.1 is also numbered 3.3.1.

Individual standards are further defined under the headings “Declarative” (what students should know), “Procedural” (what they should be able to do with their knowledge), and “Specifications” (how student achievement should be assessed). The accounting standard, for example, specifies “Uses available accounting software.”

The Minnesota graduation rule, says the Minnesota Department of Education, is not OBE. It defines “graduation requirements” which can be achieved by many methods, of which OBE is one.

“In the current educational set-up,” Wahlstrom explains, “the variable is knowledge learned. Students learn a lot or a little, and they graduate in four years.” That’s seat-time, the system that seems to be failing us.

“An OBE system is the reverse: the variable is time; the amount learned is the constant,” says Wahlstrom. Passing the tests is all that seems to matter in OBE. Hence parents worry that teachers will teach only to the test. Teachers worry that evaluations of their work will depend solely on their students’ test scores. And students worry that there is no reward for excellence. “OBE is based on the premise that all children can learn and that schools control the conditions necessary to succeed,” says Wahlstrom. “Those are pretty big assumptions.

“The state graduation rule is not equivalent to OBE,” says Wahlstrom, “in that it is not a list of what students must do. It is a way of communicating what students have achieved, a way of assuring some expectation and uniformity across our state, and a promise that educators across the state will deliver excellent instruction and assess students in a fair and equitable manner.”

Much confusion lies in whether the rule says, “do this or don’t graduate,” or whether it says, “try to do this so we can rate the result.” In other words, it is hard to tell whether the standards are hurdles that students must jump over, or yardsticks for measuring how high they can jump. In fact, it is a little of both.

The basic requirements in reading, writing, math, science, geography, and health are hurdles. “If you don’t pass those, you don’t graduate, unless you are exempt because of disability,” says Michael Tillmann, director of the standards program at the state Department of Education.

The profile of learning, i.e. the ten elements and the 64 triple-numbered standards within them, is a set of yardsticks.

{Continued On Page 10}

Graduation Standards

{Continued From Page 8}

"Students must work in and be assessed in all ten areas, but not necessarily reach a certain proficiency," says Tillmann.

According to Tillmann, then, the graduation rule means "we'll see an increase in performance because we'll see an increase in *performance assessment*."

Performance assessment means that we set up very clearly what the student must do and what will be the standard for judging the quality of that work.

"My favorite analogy is the driver's license exam," Tillmann explains. "There's a traditional [question-and-answer] test, but no one is going to give you a license for that. You have to show you are able to drive, and there are clear criteria across the state as to what's expected. Performance assessment means that we set up very clearly what the student must do and what will be the standard for judging the quality of that work."

That's what got Wahlstrom involved—performance assessment. The graduation rule has progressed to the assessment and testing stage: "pilot" schools are defining assessments and trying out parts of the graduation rule. One district, the Richfield schools just south of Minneapolis, is pilot-testing the entire rule, and the Richfield teachers invited Wahlstrom and Mike Miller of Gustavus Adolphus College to help them.

Wahlstrom joined the Richfield teachers last summer to help draft "assessment packages"—specific plans for measuring student achievement under the various standards. Wahlstrom remembers those meetings, workshops, and training sessions as a bit uncomfortable at first; she was clearly an outsider and the teachers didn't entirely trust her. But that passed.

Wahlstrom particularly helped with the foreign language assessments. To assess student achievement under what is now *Element 10, Communicating in a language other than English*, the teachers seek to measure performance rather than rote knowledge, to use real-life situations rather than contrived assignments, and to design assessments that will work for almost all foreign language instruction all across the state.

By last fall, their draft assessment package said that students will, among other tasks, create a portfolio containing a request, a thank-you, a story, a job application, and an advice column. "High school kids like giving advice to one another," notes Wahlstrom. The request is to be a note asking a friend to run a few errands for the author. The advice column needs to demonstrate cultural sensitivity. In the course

of their work, students are to participate in class, stay on task, manage time well, and "make effective use of resources." The package also defines grading standards—what is excellent, what is satisfactory.

With some modifications, that package became the guide for French, German, and Spanish classes in Richfield this year, where it undergoes trial by fire. "Student input is sought," says Wahlstrom. "Teachers ask if the assignments are 'authentic'—that's one of the buzzwords. If the kids say it's hokey to invite a friend to a dance in writing, we should adjust accordingly."

Next summer, the state's pilot sites will meet to share what they've learned about assessment packages. Richfield will have about 50 such packages to share.

Assessments will be *shared* among schools, but the Department of Education says it will not prescribe assessment methods. By law, assessment is a local decision: "The [state] board shall not prescribe the delivery system, form of instruction, or a single statewide form of assessment that local sites must use" (Minn. Stat. 121.11 §7c).

So the graduation rule sets up hurdles and defines yardsticks, but schools are free to interpret the yardsticks with tape measures, meter sticks, or a host of other measuring devices. For the seven basic requirements—reading, writing, math, etc.—schools will have to "validate" their tests against a

The rule is meant to foster consistency across the state.

state test, says Tillmann. "It is absolutely clear what math you need to know in order to graduate," he says, but "there will not be a single state-wide test. Schools will have different instruments."

So what is new here? After all, "standards are as old as schools," as Tillmann puts it, and the high school rule is "not unlike the ACT and the GRE." So what changes will actually show up in classrooms?

One, the rule is meant to foster consistency across the state. "There should be an expectation that a graduating senior who has had three years of French should be competent at level X," says Wahlstrom. "Institutions of higher education should be able to expect that consistency in any content area—science, math, language—though few students will achieve standard in all areas."

Two, the rule is meant to foster consistency within schools. It brings performance evaluation to all classes, not just the

{Next Page}

higher-level ones. "In our better classes, where we [already] expect high performance," says Dennis Laingen, the curriculum director at Richfield, "this won't be all that different. But students who have been avoiding certain challenges now will not be able to."

Three, the rule is meant to de-emphasize final exams and pay more attention to daily performance. This is the goal Wahlstrom seems to value most. "Assessment is to be embedded into instruction," she says. "There will be some high-stakes testing periods, but by and large assessment

Our position is that the K-12 people are the experts; this is a teacher-driven process.

should be an ongoing instructional behavior. If it can't be naturally imbedded in day-to-day instruction, then maybe we need to rethink this."

Wahlstrom and every other authority are quick to point out that "ongoing performance assessment," like school standards in general, is not new. *Some* teachers have worked that way all along. Now all teachers must learn to do so. "Assessment is not something we [teachers] were necessarily trained well in," says Laingen. And the state wants that problem fixed.

"The board for colleges of education [the Minnesota Board of Teaching] has ruled that all teacher preparation is supposed to be outcome based by fall 1995," says Wahlstrom. "Everybody who prepares teachers—UM, Augsburg, Hamline, Gustavus, everybody—must practice what we preach. We need to look at differences in learners and how to assess learning in a variety of ways, not just a single paper for a course, or a multiple-choice exam. Teachers teach the way they've been taught. These changes are likely to create a whole new generation of teachers."

That's why Wahlstrom is at work in Richfield, not just to advise, but to learn more about guiding professional development for teachers.

She is also there to learn about students' reactions, because Richfield students become University students. "The state wanted higher education people as partners in the pilot schools," she says, "because we clearly have an interest in what's being done in the K-12 system."

Linda Ellinger, associate to the University's vice president for arts, sciences, and engineering, helped propose the new art and geography requirements for incoming University students.² She says the people responsible for University admissions policy are watching the graduation rule evolve, commenting when new drafts are published, and otherwise

keeping their distance. "It is hard to make a statement until the rule is complete," she says. "Our position is that the K-12 people are the experts; this is a teacher-driven process. If we were telling them what to do all the time, they'd get very frustrated with us."

On the other hand, says Ellinger, the University has made clear what it needs from high schools: "one, the ability to compare and discriminate rather finely among students; and two, a summary measure in a form that will not require us to wade through portfolios."

A third concern at the University is the balance of content and process. "Early drafts of the high school standards were process oriented; they put little emphasis on teaching facts," says Ellinger. "They said students should know how to draw a hypothesis, but didn't say students should know the periodic table of elements." The University's response to those drafts, says Ellinger, went like this: "If the rules are all process and no content, we will not be able to make good admissions decisions on the basis of your transcripts. We will rely on national test scores."

Later drafts of the Minnesota high school graduation standards, says Ellinger, are beginning to address that imbalance.

For a copy of the Minnesota high school graduation standards, call Amber Brennan at the Minnesota Department of Education, 612/282-5438.

By Phil Norcross

Notes

1. Minnesota Statutes 121.11, subdivision 7c, since amended to read "... starting with students beginning ninth grade in the 1996-1997 school year."
2. The committee that proposed the first preparation requirements was chaired by Professor Andrew Collins, now on leave from the Institute of Child Development. The new proposal was presented to the Senate by Anne Hopkins, former vice president for arts, sciences, and engineering.

Research and Technology Transfer Budget Establishment in CUFS

Currently, when an account number is established in CUFS, the revenue budget is set up at the same time. Starting in late April, 1995, an expense budget (EB) will also be processed, placing the budget amount in the 7900 object (ORTTA reserve) if the budget distribution is not available. The grant administrator will then distribute the budget from the 7900 object during Notice of Grant Award processing.

Assistant VP Surbey Leaving University

Assistant Vice President for Research Marilyn Surbey will soon leave ORTTA and the University. On July 1 she begins work at Emory University in Atlanta as Assistant Vice President and Director of Grants and Contracts Accounting.

Surbey has been an accountant at the University of Minnesota since 1977. She joined research administration in 1979 as supervisor of financial reporting. In 1985 she became an assistant director at ORTTA, with responsibility over financial and effort reporting, auditing, and development of the indirect cost rate. She earned an MBA from the Carlson School of Management in 1982.

Surbey's recent work includes representing grant administration during the University's adoption of the CUFS accounting system, leading the recent increase in the University's indirect cost rate, and leading the reorganization of the effort reporting system.

At Emory, Surbey will be responsible for financial management of awards, including effort and financial reporting, inventory, and indirect costs.

Emory calls itself "one of the fastest growing research universities in the country." Its research funding in fiscal 1993 totaled \$120 million, 54th in the nation and roughly double

its 1987 funding. Emory is a private university of 1,900 faculty and 12,000 other employees, and includes schools of medicine, nursing, public health, business, law, and theology. Its endowment of \$1.76 billion is the seventh largest for a U.S. university.

Tony Potami, associate vice president for research and technology transfer, says that "Surbey's departure is a significant loss at a critical time, as we are in the midst of re-engineering grant management at the University."

Research and Technology Transfer New Grant Administrator

A new assistant grant administrator has joined ORTTA. Gary Gillet will help administer grants and contracts from the American Heart Association, foundations, and other private, "voluntary" health organizations.

Gillet previously worked for a year in the financial reporting area of ORTTA. He has a B.S. in agricultural business and an MBA in finance from Iowa State University.

Gillet replaces Carl Anderson, who left ORTTA in March.

Holdings of Research Libraries in U.S. and Canada

1993 - 1994

	Rank	Volumes in library	Volumes added	Current serials	Permanent staff	Total expenditures
Harvard University	1	12,877,360	262,113	96,291	1,000	\$ 63,923,050
University of California, Berkeley	2	8,078,685	156,040	89,948	493	35,278,578
Yale University	3	9,485,823	167,405	52,971	524	33,487,000
University of Illinois, Urbana-Champaign	4	8,474,737	194,203	91,318	394	21,534,639
University of California, Los Angeles	5	6,460,391	166,912	96,003	394	29,676,567
University of Michigan	6	6,664,081	164,908	70,336	435	30,252,302
Columbia University	7	6,532,066	161,986	66,395	457	27,915,579
Stanford University	8	6,409,239	163,395	47,320	459	35,630,950
University of Toronto	9	6,563,330	180,432	40,270	547	29,439,327
University of Texas	10	7,019,508	189,587	51,171	535	22,387,342
Cornell University	11	5,697,525	133,816	61,913	432	26,480,063
University of Washington	12	5,355,140	140,897	56,535	350	22,818,111
University of Wisconsin	13	5,535,592	124,420	46,130	367	25,069,946
Indiana University	14	5,554,529	149,827	40,548	329	21,633,483
University of Minnesota	15	5,101,275	107,386	45,705	298	23,869,764

Source: Association of Research Libraries and
Chronicle of Higher Education (31 March 1995, p. A12)

Graduate School News

Faculty Summer Research Fellowships

Graduate School Faculty Summer Research Fellowships are awarded to tenured or tenure-track faculty members who hold nine-month appointments at the University of Minnesota. The purpose of the program is to encourage quality in research and artistic creation by permitting faculty to devote a full summer session to intensive work on a specific, well-focused project. The stipend for summer 1995 is \$5,000.

Below is a list of 1995 recipients; unless otherwise noted, they are on the Twin Cities campuses.

Jean Allman *Department of History*

Of mothers, spinsters, and wicked women: tales of gender chaos from colonial Asante

Sheila Ards *Hubert H. Humphrey Institute of Public Affairs*

Patterns of child abuse and reporting

Yanjie Bian *Department of Sociology*

Employers and employee benefits in urban China

Robert Brown *Department of English*

Beyond the realm of reason: affective rhetoric and the constructed self

Michael Dennis Browne *Department of English*

Work on nonfiction project

Allen Burton *School of Kinesiology and Leisure Studies*

Dynamic similarity of locomotion in humans

Arlene Carney *Department of Communication Disorders*

Toward understanding speech perception in children with hearing loss

Cindy Christian *Department of Political Science, Duluth*

The linkage of U.S. foreign policy to development in Latin American and Caribbean nations

Norman Dahl *Department of Philosophy*

Aristotle's conception of substance in *Metaphysics*, Book VII

Fred Davis *Curtis L. Carlson School of Management*

Overconfidence in what-if analysis: active involvement vs. imaginability of outcomes

Lisa Disch *Department of Political Science*

Jazzing it up: connecting narrative to the theory and practice of democracy

Shantanu Dutt *Department of Electrical Engineering*

Design and implementation of new parallel algorithms for combinatorial optimization

Marcia Eaton *Department of Philosophy*

Connecting moral and aesthetic value

Genevieve Escure *Department of English*

Linguistic aspects of North-African/French relations

Evelyn Firchow *Department of German, Scandinavian, and Dutch*

Diplomatic edition and concordance of Notker Labeo's *Categories*

Victor Fung *General College*

Confucian and Platonic ideas of music education

Laura Gurak *Department of Rhetoric*

The rhetorical dynamics of community in cyberspace

Gary Hallman *Department of Art*

Creative production in photographic digital imaging

Simon Hooper *Department of Curriculum and Instruction*

Improving undergraduate instruction

Jasper Hopkins *Department of Philosophy*

Nicholas of Cusa on knowledge and wisdom

Ruth Joeres *Department of German, Scandinavian, and Dutch*

Respectability and deviance: self-representation of 19th-century German women writers

Leola Johnson *Program in American Studies*

In search of Iceberg Slim: exploring the literary roots of gangster rap

David Kopf *Department of History*

The genocidal nature of national identity, nationalism, and nation-building since World War II

Josephine Lee *Department of English*

Asian-American drama and the performing of ethnicity and race

Jeffrey Legro *Department of Political Science*

International norms and the use of force

David Lipset *Department of Anthropology*

Canoe and basket: plural voices and potential meanings in Murik art

Alex Lubet *School of Music*

Abi Gezunt

Lori Lucke *Department of Electrical Engineering*

Fuzzy filters

Lary May *Program in American Studies*

The big tomorrow: Hollywood and the politics of multicultural America

Robert McCaa *Department of History*

Child marriage and complex households among the Nahuas of ancient Mexico

Brian McCall *Curtis L. Carlson School of Management*

An analysis of disputes in workers' compensation

Kathryn McLane *Department of Chemistry, Duluth*

Combinatorial antibody libraries from human myasthenic thymic B lymphocytes

Louise Mirror *Department of Spanish and Portuguese*

Tradition and innovation: medieval Spanish customs among the Sephardic Jews of London

Eric Munson *Department of Chemistry*

NMR studies of materials and biological systems using laser-polarized xenon

Graduate School News

- Laurie Nelson** *Department of Electrical Engineering*
Decision-feedback receivers for wireless code-division multiple-access communications
- Craig Packer** *Department of Ecology, Evolution, and Behavior*
Epidemiology of African carnivores
- Eileen Palace** *Department of Psychology*
Role of the sympathetic nervous system in sexual arousal and response
- Andrzej Piotrowski** *Department of Architecture*
Computer imaging: new modes of depicting architecture
- Wayne Potratz** *Department of Art*
Creative research in cast metal sculpture using traditional Japanese methodology
- Richard Price** *Department of Political Science*
International realism, morality, and Nietzsche
- Paula Rabinowitz** *Department of English*
Female lives/national lands: Emily Carr, Georgia O'Keeffe, and Frida Kahlo
- Nancy Roberts** *School of Journalism and Mass Communication*
Journalism as persuasion in the Oneida community
- Timothy Roufs** *Department of Sociology-Anthropology, Duluth*
Paul Buffalo (Gah-bay-bi-nayss) oral history project
- Naomi Scheman** *Department of Philosophy*
Shifting ground: closets, margins, diasporas, and the reading of Wittgenstein
- Ilja Siepmann** *Department of Chemistry*
Simulating the critical properties of branched alkanes
- Andreas Stein** *Department of Chemistry*
Study of soft chemical reactions for the synthesis of porous solids
- John Sullivan** *Department of Political Science*
Political, social, ethnic, and racial intolerance and aggression
- Li Sun** *Department of Chemistry*
Construction and characterization of ultrathin polymeric membranes
- Shanghua Teng** *Department of Computer Science*
Geometric optimization for large sparse linear systems
- James Tracy** *Department of History*
Enterpriser of war: Emperor Charles V and his lands
- John Watkins** *Department of English*
In Queene Elizabeth's day: the legend of Elizabeth I, 1603-1714
- Peter Wells** *Department of Anthropology*
Cultural identity and political change: native peoples in Roman Europe
- Kewen Yin** *Department of Chemical Engineering, Duluth*
Fault detection and isolation in the chemical process industries
- Akbar Zaheer** *Curtis L. Carlson School of Management*
Strategic alliances in biotechnology: network structure and firm effects

Symposia, Workshops, & Conferences in June

Information supplied by Professional Development and Conference Services

Dynamics and Controls

Conference for researchers working under grants and contracts from the U.S. Air Force Office of Scientific Research.

Thursday, June 1, Twin Cities

Third Annual Summer Symposium on Children's Literature in the Classroom: Authors and Illustrators of Spanish-Speaking Heritage

Conversations with writers, illustrators, critics, and publishers meant to introduce professionals working with children to the literatures of diverse cultures. Presymposium workshop, June 15, will introduce educators to the Kerlan collection of 65,000 children's books.

Thursday and Friday, June 15-16, Walter Library and Humphrey Center

Call Shirley Mueffelman, 612/625-3850, smueffel@mail.cee.umn.edu

Sixth International Conference on Low-Volume Roads

Conference to examine and transfer new technologies and new techniques in the planning, design, construction, operation, maintenance, and administration of low-volume roads. Includes tours of the new MnDOT research facility near Monticello, the MnDOT materials lab, and the MnDOT Traffic Management Center.

Sunday through Thursday, June 25-29, Radisson Metrodome, East Bank

Call Catherine Ploetz, 612/626-2259, cploetz@mail.cee.umn.edu

Thin Film Coatings: Topics in Coating and Drying Technology

For engineers and operators working in precision coating of thin films, as in photographic and magnetic media, this course will broadly cover the technology of coating continuous webs, from fluid preparation and handling to drying.

Monday and Tuesday, June 26-27, East Bank

Call Susan Burke, 612/625-3530, sburke@mail.cee.umn.edu

Coating Process Fundamentals

For engineers and scientists to study coating formulation and processing in depth.

Wednesday through Friday, June 28-30, East Bank

Call Susan Burke, 612/625-3530, sburke@mail.cee.umn.edu

Sacred Choral Repertoire

Workshop on sacred choral literature from all periods of music and for all times of year.

Monday through Friday, June 26-30, West Bank

Call Shirley Mueffelman, 612/625-3850, smueffel@mail.cee.umn.edu

North Star Innovation Fund Preproposals Due June 15

The North Star Innovation Fund sponsors development and testing of ideas and inventions with commercial potential. The Office of Research and Technology Transfer Administration (ORTTA) is pleased to announce renewal of the fund for a third year, making available about \$200,000 for direct costs of five or six projects in calendar 1996.

The North Star Research Foundation Innovation Fund was established with a grant from the North Star Research Foundation and a matching grant from the University of Minnesota. Its mission is to address the funding gap between research discovery and proven technology.

The fund will sponsor development and testing in any field; however, the fund gives strong preference to making ideas and inventions more attractive for licensing to an existing company, or to developing ideas and inventions around which new companies can be formed.

The fund does not support basic research or development of computer software.

Preproposals are due at ORTTA by **June 15** and should be addressed to the attention of James Severson, Patents & Technology Marketing. Preproposals are limited to a maximum of two pages and must clearly outline the project, its stage of development, the steps necessary to move it to commercialization, and its commercial potential. In addition, preproposals should contain an estimate of the budget for the year and the status of the intellectual property protection (patent, copyright, trademark) on the discovery, or the potential for intellectual property protection.

Submitters of preproposals that meet the objectives of the fund will be given detailed proposal criteria and will be asked to submit a proposal by July 28. Proposals will be submitted to an external board for review and for final approval by the North Star Research Foundation Board.

It is anticipated that projects selected will receive funding by January 1, 1996.

Questions regarding the North Star Fund should be directed to James A. Severson, Patents & Technology Marketing, 612/624-0262, jim-s@ortta.umn.edu.

Administration for Children and Families

Responsible Fatherhood Projects

The Administration for Children and Families (ACF), Department of Health and Human Services, announces the availability of funding to demonstrate promising program interventions to encourage and increase responsible fatherhood. ACF will provide funding to community programs designed to strengthen the role and parenting abilities of fathers and to enable fathers to relate positively to their children and their children's mothers. The target populations for these programs should encompass a wide range of fathers, including disadvantaged, never married noncustodial fathers; separated or divorced noncustodial fathers, as well as fathers living with their children.

The recipients will operate projects designed to create an environment where fathers are encouraged and supported in conduct that allows them to improve the quality of life for their families. Projects should provide comprehensive services designed to assist men and their families to reverse the negative trends among adults and youth related to at-risk behaviors i.e., substance abuse, gang involvement, school failure, and unemployment. Beyond encouraging and increasing basic responsible acts such as establishing paternity and encouraging contact between father and children, programs should teach fathers:

- How to understand their children's development;
- How to understand and positively affect their children's behavior;
- How to be positive role models for their children; and
- How to work constructively with the children's mothers for the benefit of the children, regardless of whether both parents live in the same household as the children.

Organizations eligible to apply for financial assistance under this announcement include states, local governments, and public or private nonprofit organizations. Up to five awards will be made for budget periods of 17 months, not to exceed \$85,000, including matching funds of at least 20 percent.

The application deadline is **June 5, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Mark Fucello, Administration for Children and Families, Office of Policy and Evaluation, 370 L'Enfant Promenade SW, Washington, DC 20447; 202/401-4538.

■ Private Funders Supporting Governmental Change

Joyce Foundation

Under its special project on money and politics, the Joyce Foundation will make grants through 1997 to projects that investigate ways to change the rules governing the financing of local, state, and federal election campaigns. Projects should elevate campaign finance reform on the public policy agenda, improve the quality of public information about the current system of money and politics, analyze the influence of money on elections and policy-making at all levels of government, and involve the public in the search for solutions.

The foundation also supports projects that analyze the policy and competitive effects of current and proposed campaign finance regulations and provide legal and technical assistance to policymakers and civic organizations involved in local, state, and federal reform efforts.

Approximately \$2.3 million is available over three years; the current range for grant amounts has not been set.

The application deadlines are **August 15** and **December 15**. Applicants should submit a two- to three-page letter of inquiry briefly outlining the proposed project and its goals. For further information contact Lawrence Hansen, program officer, Joyce Foundation, 135 South LaSalle Street, Suite 4010, Chicago, IL 60603; 312/782-2464, fax 312/782-4160.

Deer Creek Foundation

The Deer Creek Foundation makes grants to advance and preserve the governance of society by rule of the majority and to protect basic rights as provided by the Constitution and the Bill of Rights. The foundation also supports educational programs related to those concepts.

Grants typically range from \$1,000 to \$25,000, the average being about \$15,000.

Upcoming deadlines are **July 15**, **October 15**, and **January 15**. Applicants should submit a letter briefly stating the objectives of the project and outlining the program design, the qualifications of the organization and the individuals concerned, the mechanism for evaluating results, and a budget. For further information contact Mary Stake Hawker, director, Deer Creek Foundation, 720 Olive Street, Suite 1975, St. Louis, MO 63101; 314/241-3228.

Stern Family Fund

The Stern Family Fund supports government accountability projects that help citizens monitor and guarantee the responsiveness of public and private institutions that wield

substantial power over their lives. The fund supports systemic reform efforts that attack the root causes of problems and funds projects that strive for a more equitable distribution of political and economic power. Priority is given to projects with regional and national impact.

The fund's Public Interest Pioneer program aims to spark the creation of new groups by making grants to individuals with meaningful experience in the public interest community or in a particular specialty who are prepared to create a cutting-edge project designed to stop or prevent government abuses. The fund also makes strategic support grants to new and small organizations and to projects focusing on campaign reform.

Funding is about \$300,000 annually. Public Interest Pioneer grants range from \$60,000 to \$100,000; strategic support grants range from \$5,000 to \$20,000.

Annual application deadlines are **January 4** for Public Interest Pioneer grants; **February 1** and **August 25** for strategic support grants. Applicants should request a copy of the fund's guidelines for preparing proposals. For further information write to Michael Causell-Feagan, executive director, Stern Family Fund, PO Box 1590, Arlington, VA 22210-0890. The fund discourages phone inquiries.

Lynde and Harry Bradley Foundation

The Lynde and Harry Bradley Foundation supports projects that cultivate a more vigorous sense of citizenship among the American people. Programs should nurture a solid foundation of competent, self-governing citizens who are capable of, and personally responsible for, making the major political, economic, and moral decisions that shape their own lives and the lives of their children. Projects may demonstrate the resuscitation of citizenship in the economic, political, cultural, or social realms; conduct policy or academic research; address the problem of citizenship at home or abroad; increase cultural and educational opportunities for grassroots economic development; or use popular writing or media to illustrate themes of citizenship for a public audience.

Grants typically range from \$20,000 to \$100,000.

There is **no application deadline**; the board meets four times a year to review grant proposals. Applicants should submit a brief letter of inquiry. For more information contact Michael Joyce, president, Lynde and Harry Bradley Foundation, 777 East Wisconsin Avenue, Suite 2285, Milwaukee, WI 53202-5395; 414/291-9915; fax 414/291-9991.

National Science Foundation

Human Capital Initiative: Opportunities for Human Capital Research

The National Science Foundation invites proposals for human capital research, defined as research which advances basic understanding of the causes of the psychological, social, economic and cultural capacities for productive citizenship. The proposed research should add to the store of fundamental theoretical knowledge about human behavior. The eventual intent of the program is that public policies may be better informed by social and behavioral science research.

NSF seeks to support fundamental research in six social contexts that affect the development and utilization of human capital:

1. Workplace, e.g.: How are workers and jobs effectively matched? How are workers motivated to acquire new skills, and how are the skills demanded by employers changing? How do individual workers respond to what kind of incentives? What management and organization systems produce greater worker efforts and satisfaction? How are high-performance workplaces best organized?
2. Education, e.g.: How can students sustain motivation to learn and perform in school? How do specific student-teacher, student-student and student-curriculum interactions help or hinder learning? How do school activities relate to other activities and events in children's lives, particularly family and peer influences? How can we nourish the potential of the best students and maximize the educational benefits of college and other post-high-school training. What organizational reforms are effective at improving student achievement and developing skills that foster life-long learning and productivity?
3. Families, e.g.: What is the effect of America's changing family structure on children's development and behavior? What child-adult interactions within families most affect children's development and result in successful parenting? Are there particular times or transitions when the quality of family interactions is especially crucial for healthy development? Why are some children more resilient than others in the face of family and social problems? How do families create social networks and how do these networks foster the development of skills among children and adults?
4. Neighborhoods, e.g.: What are the neighborhood-level social processes that determine the nature of peer influences, criminal behavior, employment, and civic responsibility?

How do neighborhood organizations affect activities and future expectations of children and adults? What are the behavioral impacts of home ownership? What are the dynamics of homelessness? What is the impact of discrimination on housing search and location choice?

5. Disadvantage, e.g.: How and why do humans categorize people into groups? What are the consequences of categorization? What are the causes of a group's disadvantage, how is it perpetuated, and how are perceptions of social categories changed? How are stereotypes formed, and how can they be reduced? What factors influence the perception of discrimination, by disadvantaged groups, and what sustains discriminatory behaviors? What are the psychosocial responses to discrimination, and what incentives and disincentives to develop human capital does discrimination induce? Why are some persons more able to overcome disadvantage and discrimination than others?
6. Poverty, e.g.: What economic changes are causing deteriorating wages among less skilled workers? How have changes in families interacted with changes in poverty in the U.S.? How do programs designed to reduce poverty change the lives of low-income families? What is the impact of poverty on the behavior and life chances of low-income people? Why do some children from poor families become effective and successful adults, while others develop serious emotional and behavioral problems? What are the causes and consequences of the growing number of single mothers?

Major projects, pilot projects, research planning grants, and workshops will be supported under this program.

No budgetary suggestions were in the announcement; all applicants are encouraged to discuss their proposals and expected budgets with a program officer from the Division of Social, Behavioral and Economic Research (SBER). Names and telephone numbers are listed in the announcement.

This is an ongoing program with annual target dates of **January 15** and **August 15**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

■ Health Resources and Services Administration

Disadvantaged Health Professional Faculty Loan Repayment Program

The Health Resources and Services Administration (HRSA) announces that applications for contracts for FY95 for the Disadvantaged Health Professional Faculty Loan Repayment Program (FLRP) are now being accepted. The purpose is to attract disadvantaged health professional faculty members for accredited health professions schools. The program provides a financial incentive for degree-trained health professions personnel from disadvantaged backgrounds who will serve as members of the faculties of those schools.

Individuals are eligible to compete for participation if they:

1. Have degrees in medicine, osteopathic medicine, dentistry, nursing, pharmacy, podiatric medicine, optometry, veterinary medicine, public health, or clinical psychology; or
2. Are enrolled in an approved graduate training program in one of the above-listed health professions; or
3. Are enrolled as full-time students in the final year of health professions training, leading to a degree from an eligible school.

Established faculty members are not eligible to apply for funds under the FLRP; only individuals who have not taught in the last 18 months prior to application to the program will be considered.

Allowable educational loan repayment expenses include:

1. Tuition expenses;
2. All other reasonable educational expenses such as fees, books, supplies, educational equipment, and materials required by the school and incurred by the applicant;
3. Reasonable living expenses;
4. Partial payments of the increased federal income tax liability caused by the FLRP payments and considered to be "other income," if the recipient requests such assistance.

It is expected that 30 contracts averaging \$27,433 over two years will be supported with these funds.

Repayment is authorized not to exceed 20 percent of the outstanding principal and interest on the individual's educational loans. Of that repayment, HRSA will pay half,

up to \$20,000; the school will pay an equal amount unless it is determined that the repayment will impose an undue financial hardship on the school, in which case payment may be made by HRSA for the entire 20 percent. Payments must be in addition to the faculty salary the participant receives.

The application deadline is **June 30, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For further information contact Lafayette Gilchrist, Division of Disadvantaged Assistance, Bureau of Health Professions, Health Resources and Services Administration, 5600 Fishers Lane, Room 8A-09, Rockville, MD 20857; 301/443-3680; fax 301/443-5242.

■ National Science Foundation Instrumentation Grants

The Computer and Information Science and Engineering (CISE) Directorate of the National Science Foundation plans a limited number of grants for the purchase of research equipment, instrumentation, or software for research in areas of science or engineering supported in the CISE Directorate.

The equipment should be necessary for the pursuit of specific research projects. Local computing equipment, including workstations, specialized processors, parallel processors, and local area networks, may be supported under this program. General-purpose office equipment is *not* eligible for support. Particular emphasis is given to those unique or new research capabilities that will ensue from the acquisition of the equipment.

The equipment should be required for at least two research projects and no more than five research projects. Grants will be for one year and will typically range from \$30,000 to \$200,000.

The application deadline is **August 7, 1995**. For further information contact the program director at 703/306-1980, ciseinst@nsf.gov. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

Faculty Research, Training and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
March 1995	337	60,479,874
Awards Processed		
March 1995	216	19,391,965
Proposals Submitted		
July 1994 - March 1995	3,174	522,257,833
Awards Processed		
July 1994 - March 1995	2,972	318,500,265
Proposals Submitted		
July 1993 - March 1994	3,090	492,433,620
Awards Processed		
July 1993 - March 1994	2,205	200,059,629

Teat Dip Evaluation

Ralph J. Farnsworth, Clinical and Population Sciences
3M Company
\$16,790 - 12/01/94-03/31/95

Association of Inflammatory Cytokines with Lung Injury in Bovine Pneumonic Pasteurellosis

Trevor R. Ames, Clinical and Population Sciences
Samuel K. Maheswaran, Veterinary Pathobiology
American Veterinary Medical Association Foundation
\$15,000 - 01/01/95-12/31/95

Minnesota Center for Survey Research (MCSR): Business and Residential Shopping Patterns on Trunk Highway 12

Rossana Arnson, Center for Urban and Regional Affairs
Barton-Aschman Associates, Inc.
\$22,300 - 10/27/94-06/30/95

Optimal ECG Criteria Sets for Documenting Silent Myocardial Infarction

Richard S. Crow, Epidemiology
Merck, Sharp and Dohme
\$19,726 - 01/01/95-09/30/95

Bioavailability, Trophic Transfer, and Fate of Pollutants

Deborah L. Swackhamer, Environmental and Occupational Health
University of Delaware
\$59,768 - 09/15/94-09/15/96

Inhaled Corticosteroid Study

John E. Connett, Biostatistics
Rhone-Poulenc Company
\$29,551 - 12/01/94-12/01/95

Feedlot Initiative, Manure Management Education

Gerald R. Miller, College of Agriculture
James L. Anderson, Soil Science
St of MN, Department of Agriculture
\$140,000 - 11/01/94-06/30/95

Neoral vs. Sandimmune in Primary Liver Transplant Patients

William D. Payne, Surgery
Sandoz, Inc.
\$30,000 - 10/01/94-12/31/95

Isolation of a Growth Hormone Inducible Nuclear Factor

Susan A. Berry, Pediatrics
Genentech Foundation
\$37,000 - 03/01/95-02/28/96

Mechanisms of a Novel Experimental Therapy for GI Cancer

Daniel A. Saltzman, Surgery
Peter M. Anderson, Pediatrics
NIH, NCI
\$31,200 - 02/01/95-01/31/96

Thiocyanate-Based Toxicity of Eosinophil Peroxidase

Arne Slungaard, Medicine
NIH, NHLBI
\$196,909 - 02/01/95-01/31/96

An Open Label, Phase III Study to Evaluate the Safety and Efficacy of rFVIIa when Administered in the Home to Control Joint, Muscle, and Mucocutaneous Bleeds in Hemophiliacs with Inhibitors

Nigel Key, Medicine
Margaret Heisel, Medicine
Novo Nordisk Endotech
\$17,000 - 12/16/94-12/15/95

Inhaled Nitric Oxide Protocol INO-04

Craig A. Henke, Medicine
Peter B. Bitterman, Medicine
David H. Ingbar, Medicine
Ohmeda, Inc.
\$269,903 - 12/01/94-12/31/95

Safety and Efficacy of Propionyl L-Carnitine in Peripheral Arterial Disease

Alan Hirsch, Medicine
Sigma-Tau
\$72,455 - 11/18/94-12/31/99

Integrins, Cell Membrane, and Repair after Renal Injury

Mark S. Paller, Medicine
Baxter Healthcare Corporation
\$120,000 - 10/01/94-09/30/97

Transmembrane Signalling in Cytotoxic T Lymphocytes

Matthew F. Mescher, Laboratory Medicine and Pathology
NIH, NIAID
\$139,561 - 03/01/95-02/29/96

Laminin Peptides/Receptors in Metastatic Cell Function

Leo T. Furcht, Laboratory Medicine and Pathology
NIH, NCI
\$245,101 - 03/01/95-12/31/95

Study of Duplication of M-bcr in Patients with Chronic Myeloid Leukemia

Craig Litz, Laboratory Medicine and Pathology
NIH, NCI
\$53,640 - 02/10/95-01/31/96

Identifying High-Risk Elderly Persons

Charles E. Boulton, Family Practice and Community Health
James T. Pacala, Family Practice and Community Health
Group Health Foundation
\$27,005 - 02/01/95-10/31/95

Scarce Medical Services Contract—Anesthesiology

Richard J. Palahniuk, Anesthesiology
Veterans Administration
\$283,866 - 01/01/95-06/30/95

Temperature Thresholds at which Applied Cooling Prevents Pressure Ulcers and at which Applied Warming Promotes Healing

Paul A. Iuzzo, Anesthesiology
Ephraim M. Sparrow, Mechanical Engineering
National Science Foundation
\$49,999 - 12/01/94-11/30/95

HIV-1 Neurotoxicity: Mechanism and Modulation by Opioids

Stanley A. Thayer, Pharmacology
NIH, NIDA
\$158,148 - 03/15/95-02/29/96

Pain, Opiate, and Serotonin

Martin W. Wessendorf, Cell Biology and Neuroanatomy
NIH, NIDA
\$157,604 - 03/15/95-02/29/96

Phosphorimager and Densitometer Facility

Paul G. Siliciano, Biochemistry (Med)
Minnesota Medical Foundation
\$30,000 - 02/01/95-01/31/96

Crystallographic Studies of Electron Transfer Proteins

James B. Howard, Biochemistry (Med)
NIH, NIGMS
\$86,642 - 01/01/95-12/31/95

Modelling Watershed Influences on Riparian and Aquatic Ecosystems

Heinz Stefan, St. Anthony Falls Hydraulic Laboratory
U.S. Department of Agriculture
\$85,000 - 10/01/94-09/30/97

Effects of Turbulence and its Scales on the Flow Around Rectangular Prisms

Cesar Farell, St. Anthony Falls Hydraulic Laboratory
National Science Foundation
\$102,250 - 03/01/95-02/29/96

Study of the Influence of a Fuel Additive on Diesel Performance

David B. Kittelson, Mechanical Engineering
Econalytic Systems, Inc.
\$23,138 - 11/01/94-06/30/95

Thermal Management of 21st-Century Electronic Systems

Avram Bar-Cohen, Mechanical Engineering
National Science Foundation
\$19,930 - 03/15/95-02/29/96

Development of Instrumentation for Measuring Sub-0.5 micron Particles in Semiconductor Processing Equipment

Peter H. McMurry, Mechanical Engineering
David B. Kittelson, Mechanical Engineering
Stephen A. Campbell, Electrical Engineering
Semiconductor Research Corporation
\$125,000 - 09/01/94-08/31/95

Aerosol Processing and Filtration

Benjamin Y. Liu, Mechanical Engineering
University of Houston
\$21,000 - 01/01/95-12/31/95

Young Scholars Initiative: Project YES (Young Emerging Scholars)

Harvey B. Keynes, Mathematics
National Science Foundation
\$52,239 - 02/01/95-06/30/96

Mineral Fabrics and Magnetic Mineralogy of the Barbados Accretionary Prism

Bernard Housen, Geology and Geophysics
Subir K. Banerjee, Geology and Geophysics
Joint Oceanographic Institute
\$23,523 - 12/05/94-07/31/95

Rheology of Basal Ice

Roger L. Hooke, Geology and Geophysics
Neal R. Iverson, Geology and Geophysics
National Science Foundation
\$69,385 - 04/01/95-03/31/96

Investigating the Impact of Wind-Electric Generation on NSP Power System

Ned Mohan, Electrical Engineering
Bruce F. Wollenberg, Electrical Engineering
Northern States Power Company
\$35,722 - 01/01/95-08/31/95

Storage and Access Methods for Advanced Traveller Information Systems

Shashi Shekhar, Computer Science
St of MN, Department of Transportation
\$42,500 - 03/01/95-02/29/96

Archival of Traffic Data: Evaluation of Alternative Data Base Management Systems (DBMS) Architectures

Shashi Shekhar, Computer Science
St of MN, Department of Transportation
\$97,500 - 03/01/95-02/29/96

Robust Krylov Subspace Solution Techniques

Yousef Saad, Computer Science
Boeing Commercial Airplane Group
\$30,000 - 12/16/94-11/30/95

Vehicle Navigation and Localization Using Multiple Navigation Aids

Daniel L. Boley, Computer Science
St of MN, Department of Transportation
\$40,000 - 03/01/95-02/29/96

Research Experiences for Undergraduates in Chemistry

Louis H. Pignolet, Chemistry
National Science Foundation
\$50,000 - 03/01/95-02/29/96

Does Education Limit Lead Burden?

Amos S. Deinard, Pediatrics
HRSA, Maternal and Child Health
\$181,294 - 01/01/95-12/31/95

Mental Health Continuation Grant

Amos S. Deinard, Pediatrics
Hennepin County
\$1,004,138 - 01/01/95-12/31/95

Futures Research Project

Barbara Lukermann, Humphrey Institute
St of MN, Department of Transportation
\$40,120 - 09/15/94-08/31/96

Fast Product Innovation and Product Quality: Strategic Alliance or Tradeoff?

Roger Schroeder, Operations and Management Science
National Science Foundation
\$45,026 - 01/15/95-12/31/95

Minnesota Pesticide Impact Assessment Program

B. Subramanyam, Entomology
U.S. Department of Agriculture
\$15,140 - 02/01/95-01/31/96

Developing and Recommending Higher Protein and Oil Soybeans

James H. Orf, Agronomy and Plant Genetics
St of MN, Department of Agriculture
\$150,000 - 12/31/94-06/30/97

Evaluation of Engineering and Ergonomic Control Technology

John M. Shutske, Agricultural Engineering
Marshfield Medical Research and Education Foundation
\$116,609 - 09/30/94-09/29/95

Project Chess Evaluation

Rosemarie Park, Curriculum and Instruction
James M. Brown, Vocational and Technical Education
Ramsey County
\$15,371 - 01/01/95-12/31/95

New Retroreflective Sheeting Materials on Highway Signs

Stirling P. Stackhouse, Kinesiology and Leisure Studies
Michael G. Wade, Kinesiology and Leisure Studies
St of MN, Department of Transportation
\$25,000 - 09/15/94-01/31/96

Developmental Genetics of *Caenorhabditis elegans*

Robert K. Herman, Genetics and Cell Biology
NIH, NIGMS
\$179,613 - 03/01/95-02/29/96

Characterization of Bovine Sperm Adenylate Kinase

Patrick Schoff, Natural Resources Research Institute, Duluth
NIH, NICHD
\$56,326 - 01/01/95-12/31/95

Evaluation of a Top-Fed, Wet, Magnetic Cobber on Rod-Mill Feed

Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Blair R. Benner, Natural Resources Research Institute, Duluth
St of MN, Department of Natural Resources
\$37,750 - 02/16/95-06/30/95

Evaluation of the Effect of Fines in a Rod Mill

Blair R. Benner, Natural Resources Research Institute, Duluth
Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
St of MN, Department of Natural Resources
\$52,500 - 02/16/95-06/30/95

Forest Products Technology Advancement

Roy D. Adams, Natural Resources Research Institute, Duluth
U.S. Department of Agriculture
\$232,995 - 02/01/95-01/31/99

Expression of Carbamoyl-Phosphate Synthetase III

Paul M. Anderson, Medicine, Duluth
Wilmar L. Salo, Medicine, Duluth
David J. Eide, Medicine, Duluth
National Science Foundation
\$95,000 - 05/01/95-04/30/96

New Computer Model of Orbital Debris Environment

Gregory W. Ojakangas, Geology, Duluth
National Aeronautics and Space Administration
\$20,574 - 02/06/95-09/30/95

Final Report Phase of Hannaford Data Recovery Project

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
Susan Mulholland, Science and Engineering, Duluth
St of MN, Department of Transportation
\$105,868 - 03/14/95-12/31/95

Differentiative Programs of Lymphoid Progenitor Cells

Tucker W. LeBien, Laboratory Medicine and Pathology
NIH, NCI
\$235,142 - 03/01/95-12/31/95

Immunology Training Program

Tucker W. LeBien, Laboratory Medicine and Pathology
NIH, NIAID
\$114,622 - 08/01/95-07/31/96

Disease Surveillance and Epidemiological Studies of Lyme Disease

Russell C. Johnson, Microbiology
St of MN, Department of Health
\$71,000 - 04/15/94-04/15/95

Correction

Cycle-Time Reduction in a Multiproduct Assembly Shop

Shahruk A. Irani, Mechanical Engineering
Minnesota Valley Engineering
\$45,805 - 01/09/95-12/31/95

Journal Articles by University Authors

Listed below are some of the recent publications by University of Minnesota faculty, staff, and students, as reported by the authors and by "Research Alert," a publication of the Institute for Scientific Information.

Please send news of your publications to Phil Norcross, editor, Research Review, phil@ortta.umn.edu.

Balachandar, S., Yuen, D.A., Reuteler, D.M., Lauer, G.S. Viscous dissipation in three-dimensional convection with temperature-dependent viscosity. *Science* 267 (24 Feb. 1995): 1150-1153.

Bowyer, J. Where will they come from: wood and other raw materials for the 21st century. *Forest Products Journal* 45 (Feb. 1995): 17-24.

Byers, L.J., et. al. Increased levels of laminin in ascitic fluid of patients with ovarian cancer. *Cancer Letters* 88 (6 Jan. 1995): 67-72.

Connor, R.A., Hillson, S.D., Krlewski, J.E. An analysis of physician recruitment strategies in rural hospitals. *Health Care Management* 20 (Winter 1995): 7-18.

Crooker, B.A., Preston, R.L., Boyd, R.D. Data integrity: conduct of clinical investigations, university investigator perspective. *Journal of Animal Science* 73 (Feb. 1995): 622-628.

Difabio, R.P., Mackey, G., Holte, J.B. Disability and functional status in patients with low-back pain receiving workers compensation: a descriptive study with implications for the efficacy of physical therapy. *Physical Therapy* 75 (March 1995): 180-193.

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ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number		612/624-4843	
Financial Reporting Fax Number		612/626-0321	
	Name	Number	Internet
Associate Vice President, ORTTA	A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President	Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director	Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing	Michael P. Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information		624-5599	
Director of Research Administration	Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry (HS except Med Sch)	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Business/Industry (Med Sch only)	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc)	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
Voluntary Health/Am Heart/Foundation	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations	Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)	Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)	Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA	Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information		624-0550	
Director, Technology Licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing	William Rosenberg	624-9568	bill@ortta.umn.edu
Technology Licensing	Laurel Halfpap	626-9293	laurel-h@ortta.umn.edu
Director, Technology Licensing (Health Sciences)	Jim Severson	624-0262	jim-s@ortta.umn.edu
Technology Licensing	Michael F. Moore	624-9531	michael@ortta.umn.edu
Technology Licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Assistant Director, Trademark and Software Licensing	Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Transfer Coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting			
Indirect Cost and Other Rate Development	Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions	Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN	Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts	Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed	Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal	Renee Frey	624-7850	renee@ortta.umn.edu
Effort Reporting	TBA	624-2040	@ortta.umn.edu
Effort Help Line		625-7824	
Information Services			
Assistant Director	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher	Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)			
Fax: 612/626-9755	Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer			
Sr. Grant and Contract Administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator	Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary	Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris			
Grants Development	Tom Mahoney	612/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff	Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list! It is generated by AIS.

For faculty changes, please write or call Administrative Information Services (AIS), 1300 S. 2nd Street, Suite 660; 624-0555. (AIS labels may be identified by the string of numbers over the name).

For non-AIS labels only, please send the following:

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RESEARCH REVIEW

Office of Research and Technology Transfer

June 1995

Critical Measure for Scholarship, Research, and Artistic Accomplishments Presented to Regents

A mechanism for measuring the faculty's scholarship, research, and artistic accomplishments will be proposed to the University Board of Regents at its June meeting. The regents are expected to act on the proposal in July.

The scholarship, research, and artistic accomplishments measure says the University will make an annual inventory or "portfolio" of the faculty's accomplishments. The authors of the measure emphasize that it will produce a *qualitative* account of the faculty's accomplishments and help to communicate what the University produces. A *quantitative* measure is not possible, they say, and the data will not be suitable for comparison of individuals, of units within the University, or of this university with other institutions.

The chief debate regarding this measure has been whether to focus attention on particularly significant accomplishments of a select few of the faculty, or to inventory almost all faculty accomplishments. The debate favored the comprehensive approach, and that is what the June proposal recommends to the regents.

The measure is described in detail below.

Drafting and Review of the Critical Measures

The scholarship, research, and artistic accomplishments measure is one of seven measures proposed to the regents this month. The other six concern the student experience at the University, student experience after graduation, Minnesota citizens' overall satisfaction with the University, the faculty and staff experience, University facilities, and development of the University's financial resources. These seven measures result from the "second phase" of work on the "University 2000 Institutional-Level Critical Measures and Performance Goals."

The regents called for such measures when they adopted the U 2000 plan in January 1994. As a result of the first-phase work, the regents adopted five measures last December that concern the high school records of new students, graduation

{Continued On Page 5}



Doctoral student Andrea Sachs spoke to humanities scholars at the University's Tweed Museum of Art in Duluth. See story, page 7.

Photo by Phil Norcross

Inside

Bureau of Health Professions Expanded Authority	2
ORTTA Negotiates Higher Indirect Cost Rate	3
End-of-Year Accounting	3
Human Subjects: Proper Identification of Principal Investigator	4
Humanities Scholars Meet in Duluth	7
Graduate School News	10 - 13
Local Symposia and Conferences	14
Journal Articles by University Authors	15
Revision of NIH Career Development Grant Mechanisms ...	16
Program Information	17 - 20
Faculty Research, Training, and Service Awards	21 - 22

Sponsored Account Deadline

Noon, June 30

— Nonpayroll documents due at ORTTA —

— Payroll type 38s due at payroll office —

See story, page 3.

BHPr Expanded Authority

As part of efforts to streamline the administration of its grants program, the Bureau of Health Professions (BHPr), Health Resources and Services Administration, has been authorized to provide expanded authority to grantees for approval of a number of administrative actions which previously required BHPr approval. These include 1) preaward costs, 2) cost-related prior approvals, 3) carryover of unobligated balances, and 4) extensions without additional funds.

The expanded authorities are effective for all *designated* bureau programs with a budget period start date on or after July 1, 1995. The expanded authorities are not applicable to all BHPr programs.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. For questions concerning the expanded authorities, please contact Brenda Selser, Chief, Residency and Advanced Grants Section, 301/443-6960, or Wilma Johnson, Acting Chief, Centers and Formula Grants Section, 301/443-6880.

RESEARCH REVIEW

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Director of Communications: Michael P. Moore

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Associate Vice President: A. R. Potami

Research Review is a monthly publication of the Office of Research and Technology Transfer Administration. Its purpose is to inform faculty and administrators who are involved with sponsored research and technology transfer on procedures and policies of granting agencies, on institutional policy and other information necessary to the preparation of research proposals, and on funding opportunities.

Research Review welcomes ideas and comments from all readers. Write to *Research Review* at 1100 Washington Avenue South, Suite 201, Minneapolis, MN 55415-1226, or call Phil Norcross, 625-2354, or Michael P. Moore, 624-9398.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, creed, color, sex, marital status, national origin, disability, public assistance status, age, veteran status, or sexual orientation.

Upon request, *Research Review* is available to those who need it in alternative formats, such as Braille or audiotape.

Indirect Cost & Fringe Benefit Rates

Indirect Cost Rates

ORTTA expects the University's new indirect cost agreement to be dated May 22, 1995 (final copy of the agreement was not available when *Research Review* went to press); this date should be used where required on applications.

In rare cases, particular grant programs have maximum rates that are lower than the rates below. If you need to know *which rate to use for a proposal*, call ORTTA Grant Administration, 624-5599, to be put in touch with the appropriate grant administrator. If you have questions on *indirect cost rate development*, please call Doyle Smith, 626-9741; or Aubrey Gold, 626-9895.

Predetermined Final Rates for
Rates through 6/30/95 7/1/95-6/30/99

Research

On-Campus	45.00%	47.00%
Off-Campus *	24.00%	26.00%
SAFHL On-Campus	55.00%	54.00%
SAFHL Off-Campus	26.00%	26.00%
Hormel	45.00%	50.00%

Other Sponsored Activity

On-Campus	30.00%	35.00%
Off-Campus *	24.00%	26.00%

Instruction

On-Campus	50.00%	52.00%
Off-Campus *	26.00%	26.00%

* A project is considered off-campus if more than 50% of the direct salaries and wages of its personnel are incurred at a site neither owned nor leased by the University.

Fringe Benefit Rates

When submitting proposals, please use the following rates (as of February 1995).

	Academic	Graduate Students *	Civil Service
7/1/94 - 6/30/95	23.0%	36.1%	29.8%
7/1/95 - 6/30/96	25.6%	33.7%	30.7%
7/1/96 - 6/30/97	26.1%	35.8%	29.1%
7/1/97 - 6/30/98	26.1%	35.8%	29.1%

* Increase the indicated rates by 7.7 percent if 1) the student is *not* enrolled for at least six credits per quarter, or one credit for Ph.D. candidates working on dissertations; or if 2) the student is employed for *more* than twenty hours per week or on an appointment exceeding 50 percent.

For questions regarding fringe benefit rate development or the breakdown of charges, call Vivian Fickling at 624-2009.

Rate changes will be reflected in this section.

ORTTA Negotiates Higher Indirect Cost Rate with Federal Government

The indirect cost rate for on-campus sponsored research at the University will increase from 45 percent to 47 percent next fiscal year, and for off-campus research the indirect cost rate will rise from 24 percent to 26 percent. These rates resulted from negotiations between representatives of ORTTA and the U.S. Department of Health and Human Services.

Other changes include an increase in the instruction overhead rate from 50 percent to 52 percent; an increase in the overhead rate for other sponsored activities, such as public service awards, from 30 percent to 35 percent; an increase in the overhead rate for research at the Hormel Institute from 45 percent to 50 percent; and a decrease in the overhead rate for research at the St. Anthony Falls Hydraulic Laboratory from 55 percent to 54 percent. The new rates will stay in effect for four years, from July 1995 through June 1999. A table of all the University's indirect cost rates appears at left.

All new proposals should include the new rates in the proposed budgets submitted to sponsors through ORTTA. Effective July 1, 1995, all agreements will be charged the new rates unless a specific agreement was negotiated at a fixed rate of overhead. Almost all federal grant agreements provide that the University is able to collect its most current negotiated rate, but the government is not obliged to provide additional funding for current agreements to compensate for the additional indirect costs. For the portion of existing agreements extending past July 1, 1995, ORTTA will charge the new rates, if the sponsoring agency allows additional funding for indirect costs. In accord with past practices, ORTTA will not reduce direct costs to investigators if the agency does not allow the total award amount to increase to accommodate increased overhead.

An article explaining the work that went into justifying the increases will appear in the July *Research Review*.

End-of-Year Accounting

June Financial Reports for Sponsored Accounts will use *Pre-Period 12* CUFS Reports

Deadline for Expenditure Documents for Sponsored Accounts is June 30

For the third year, ORTTA will use special pre-period 12 CUFS reports generated in early July to prepare Financial Status Reports (FSRs) for sponsored accounts. The ORTTA FSRs will include only those expenditures that appear in the special pre-period 12 CUFS reports.

Hence nonpayroll expenditure documents for all sponsored accounts must be delivered to ORTTA by noon on June 30, 1995, in order to meet the Business Services cut-off date of July 3 for the pre-period 12 reports. Documents received after that date will be reflected on Period 1 of FY96. FY95 payroll type 38s on sponsored accounts are due at payroll by noon on June 30, 1995.

Three pre-period 12 CUFS reports—the Grant Summary, Grant Detail, and Commitments and Revenues by Sub-object and Sub-org—will be provided exclusively to ORTTA, which will use them to prepare FSRs for all NIH grants with expanded authorities and no restricted categories, and for continuing grants without expanded authorities that are in overdraft.

Any expenses that a principal investigator wants reflected on the FSR must have been included on the pre-period 12

report. A copy of the FSR will be sent to the principal investigator and departmental accountant with a copy of the pre-period 12 report. There will *not* be an option of reviewing or making changes to these reports. Reports will *not* be revised.

Regulations stipulate that the University must submit NIH financial reports within 90 days of June 30, or NIH could rescind the University's expanded authorities and the University could lose advance payments and/or be designated as a high-risk grantee. Last year ORTTA was able to submit 83 percent of the June 1994 ending NIH reports within the 90-day deadline using the pre-period 12 reports. Three years ago, when we did not have pre-period 12 reports, none of the June 1992 ending NIH reports were submitted within the 90-day deadline.

If necessary, the pre-period 12 reports will also be used for other financial reports or invoices to meet submission deadlines. These procedures will not be used on final reports or reports that have categories with funds that revert.

Institutional Review Board: Human Subjects Committee

Proper Identification of Principal Investigator for Research Studies

The IRB office has received several requests for information on the proper identification of the principal investigator (PI) for research studies.

University policy on grants management clearly limits the role of PI to specific groups of individuals. The IRB can and does allow greater latitude on designating the PI when external funding is not an issue. In some cases, a student researcher is considered the PI of a study when serving under the guardianship of an academic advisor.

The Food and Drug Administration (FDA) has specific requirements for PI designation and distinguishes the responsibilities of sub-investigators or co-investigators from those of PIs. In a recent "Information Sheet" (March 1995) the FDA discussed these issues:

Frequently Asked Questions Concerning the Identification of Persons Involved in a Study and Their Responsibilities

Who should be listed in Investigational New Drug (IND) or Investigational Device Exemption (IDE) applications as an investigator?

FDA regulations define an "investigator" as an individual who actually conducts a clinical investigation (i.e., under whose immediate direction the drug or device is administered or dispensed to a subject) (21 CFR 312.3(b) for drugs; 21 CFR 812.3(i) for devices). Sometimes a team of individuals that may include more than one investigator conducts a study. In such a study, one investigator must be designated as the responsible team leader. The term "subinvestigator" is defined as any team member (e.g., research fellows, residents), other than an investigator, who may help design and conduct the investigation but does not actually direct its conduct (21 CFR 312.3(b)). Still other team members who would not be listed on the form may include technicians and other assistants who are not responsible for the study's conduct and pharmacists and nurses if they only dispense the test article.

The application for a research or marketing permit should identify any person meeting the definition of the term "investigator" as an investigator (21 CFR 812.20(b)(4) for devices). The application should also identify any person meeting the definition of the term "subinvestigator" as a subinvestigator (21 CFR 312.23(a)(6)(iii) (b) for drugs). Only persons qualified to diagnose and treat disease need be listed (M.D., D.O., D.D.S., etc.). In a long-term study where house staff are to participate but their identity is not known in advance "residents on service" will suffice.

Who may distribute and administer test articles?

Sponsors may distribute test articles only to qualified and responsible investigators who control the test article's availability and who have signed an investigator's agreement (Form FDA-1572 for drugs)(21 CFR 312.53(c) for drugs; 21 CFR 812.43(a), (b), and (c) for devices). FDA regulations require sponsors of new drug and device investigations to obtain assurances from their investigators stating that the investigator, or subinvestigators responsible to the investigator, will supervise the drug's or device's administration and not supply the drug or device to any person not authorized to receive it (21 CFR 312.61 for drugs).

As stated above, before permitting an investigator to begin an investigation, the sponsor must obtain the investigator's signed agreement to comply with FDA's regulatory obligations for investigators. The agreement contains, among other things, an investigator's commitment to personally conduct or supervise the described investigation.

Investigators involved in drug studies must sign a State of Investigator (Form FDA-1572) agreement. No standard agreement form exists for device studies. The device study sponsor prepares a draft agreement and then negotiates its final terms with the investigator, following content requirements in the IDE regulations. After the investigator signs the FDA-1572 or device investigator agreement, the sponsor retains the agreement and maintains it for FDA review as necessary. The draft agreement that is to be used in a device study must be submitted to FDA as part of the IDE application.

What are the responsibilities of sponsors who contract for multi-institutional studies and investigators who participate in these studies and supervise work performed at other locations?

Sponsors of multi-institutional studies may contract with qualified clinical investigators for the performance of investigational drug and device studies. The sponsors may also designate an investigator coordinator to supervise the work or gather the data from investigators performing the study at other locations. However, at least one individual at each institution should meet the definition of the term "investigator" and should sign his or her own form FDA-1572 or device investigator agreement to assume authority and responsibility for the conduct of the study at his or her facility. The sponsor should identify each investigator and his or her functions in all submissions to FDA.

If the investigator coordinator also serves as a monitor-coordinator of investigators at other locations, he or she should have access to the investigators' office/hospital records and

{Next Page}

Critical Measure

{Continued From Page 1}

rates, diversity of the University community, investment per student, and sponsored funding. The sponsored funding measure states two goals: The University seeks to increase its sponsored funding by 5 percent per year, and the University seeks to stay among the nation's top 15 universities in federal R&D funding.

Phase-three measures and goals will be developed during 1995-96 regarding the reputation of University programs, its responsiveness to market demands and state needs, and its outreach, public service, customer service, communications technology, research equipment, and interdisciplinary and applied programs.

Development of the phase-two measures was headed by Robert Kvavik, associate vice president, vice provost, and executive officer for academic affairs. Drafts began circulating for comment in December 1994. Comment has particularly been sought, say the authors, from the University Senate, student government, student affairs staff, deans, the Civil Service Committee, the president's minority advisory committees, labor-management committees, and all the University's campuses.

The Critical Measure of Scholarship, Research, and Artistic Accomplishments

Final wording of the second-phase measures, as presented at the June regents' meeting, was not available when this *Research Review* went to press. The following account draws on the March 1995 draft of the measures and on review and comment by the Academic Affairs staff who have since produced the final wording: Research Associate Halil Dundar, Ph.D., chief author of the scholarship measure, Research Associate Darwin Hendel, Ph.D., and Special Project Associate Jane Whiteside, Ph.D.

{Next Column}

IRB: Human Subjects

{Continued From Previous Page}

case report forms, just as drug or device company personnel do. The investigator coordinator will thus be able to do quality control audits of the work performed by the investigators.

Each investigator signing a form FDA-1572 or device investigator agreement and acting in the capacity of monitor-coordinator must observe the applicable regulations on conducting studies, Institutional Review Board review, informed consent, and recordkeeping. He or she retains overall study responsibility but is not required to have direct contact with subjects at each separate research facility.

[The University of Minnesota IRB records must include all individuals identified on an FDA investigator form to ensure accurate record keeping. If you have questions or if we may assist you with other IRB matters, please call Moira Keane at 624-9829.]

For an up-to-date copy of the measures, call Hendel at 625-0129 or write to hendel@mailbox.mail.umn.edu. Hendel also invites comment on the measures.

The emphasis of this measure is on the quality and impact of accomplishments, rather than on the quantity of output.

The proposed measure of scholarship, research, and artistic accomplishment would create an "*Annual University Scholarly Accomplishments Portfolio* that would list the major scholarship, research, and artistic accomplishments of faculty across the institution. . . . The emphasis of this measure is on the quality and impact of accomplishments, rather than on the quantity of output."

The measure will record two categories of faculty accomplishment, as follows:

1. "*Creative and scholarly research products* includes the following major items: a) scholarly books, monographs, book chapters, etc.; b) articles published in scholarly or professional journals; c) conference proceedings; d) exhibits and exhibitions; e) patents and licenses; f) software; and g) designs."
2. "*Scholarly recognition* includes many types of awards, prizes, honors, and appointments by professional organizations or societies, and reflects the quality of a faculty member's scholarly work and relative standing in his or her field. Although largely subjective, scholarly recognition—particularly by national and international organizations—provides important information about the quality, importance, and significance of the creative and scholarly work of faculty as determined by peers."

The proposal emphasizes that the measure will not focus on counting publications, awards, etc. Rather, it will "highlight significant faculty achievements by listing and briefly describing them." Such an approach is necessary, says the measure, in order to communicate the depth, breadth, and richness of the faculty's achievements and influence. "It would be extremely difficult—and probably meaningless—to reduce such a large number of diverse products into a single, numerical count."

Further, this measure is not meant to establish a baseline, set goals, or provide comparisons. No comparable set of data currently exists to provide a baseline at the University. The data are qualitative, so quantitative goals of the kind set in

{Next Page}

Critical Measures

{Continued From Previous Page}

other measures are not possible. Within the University, accomplishments in one unit or discipline cannot be fairly compared with those in another unit or discipline; and there are no data sets to allow accurate comparison among universities.

Nonetheless, the March draft of the measure claims the following benefit: "Even if this measure does not result in a numerical performance goal, it will increase attention to faculty scholarly accomplishments, with presumably positive results. For example, it is expected that information provided through this critical measure would be used by the president, senior vice presidents, provosts and chancellors, and deans to assess the quality and quantity of faculty accomplishments and to take the appropriate actions to

The June proposal favors a comprehensive list of accomplishments by all faculty, rather than a selection of particularly significant accomplishments by a few faculty.

improve if needed. This measure is also expected to be used to provide better information to external audiences about the accomplishments of University faculty."

Selection of Accomplishments

The March draft of the measure suggested two schemes for selecting accomplishments to go in the annual portfolio:

1. Minimum standards could be used to compile a comprehensive list, then the "most important, high-quality accomplishments" could be selected for inclusion in the University's annual measure. The selection could be made within colleges; or by provosts, chancellors, and central administration.
2. Colleges could specify criteria suitable for their particular disciplines and then report only the accomplishments that meet their criteria.

To help define what are significant accomplishments, the draft measure listed the following as examples of important work:

- Publication in a leading refereed journal
- A significant level of citation
- Editorship or associate editorship of a leading journal or book series
- Awards or similar recognition by important professional or disciplinary associations

- Leadership in an important national or international professional or disciplinary association
- Membership in an important national or international organization or board in a specific discipline (e.g. membership in the National Academy of Sciences)
- National and international recognition by professional and nonprofessional (e.g. news media) organizations for important contributions to art or knowledge
- Ground-breaking innovation, regardless of widespread recognition
- Patent, license, or copyright protection
- Performance in important venues

After review, debate, and revision, the June proposal favors a comprehensive list of accomplishments by all faculty, rather than a selection of particularly significant accomplishments by a few faculty. Specific accomplishments may be "highlighted," especially in communications with people outside the University, but no systematic effort or narrowly defined criteria will measure "particularly significant accomplishments."

Scholarship Measure to Work in Conjunction with Other Measures

The proposal for the measure of scholarship, research, and artistic accomplishments points out that this measure is closely related to three other measures of faculty success—those regarding sponsored funding, the work of interdisciplinary and applied programs, and the reputation of University programs.

The scholarship measure, however, will better account for the variety of faculty accomplishments. Measuring sponsored funding, for example, does not account for accomplishments in disciplines where little sponsored funding is available or on campuses that emphasize teaching and public service.

The proposal also states that any increase in scholarly accomplishments depends on certain "critical institutional actions," as follows:

- Recruitment and retention of world-class researchers, scholars, and artists who are excellent teachers and reflect the diversity of our society
- Promotion of basic research and interdisciplinary activities
- Response to the demand for applied research
- Upgrading of the research infrastructure

Humanities Scholars Meet in Duluth

"First Reading XV," an annual conference at the University of Minnesota, Duluth, for the presentation of scholarly papers in humanities, took place on April 28. Of the 20 papers presented, four are abstracted below. The presenters and sponsors—the UMD Department of Interdisciplinary Programs, the Tweed Museum of Art, and the Popular Culture/American Culture Association—emphasize that "First Reading" is an informal gathering for presentation of preliminary results and early drafts.

Criticism of *The Bell Curve* Needs a New Approach

Political scientist Stephen Chilton sought to improve on rebuttals of *The Bell Curve* and similar arguments that intelligence is heritable and grounds for discrimination.

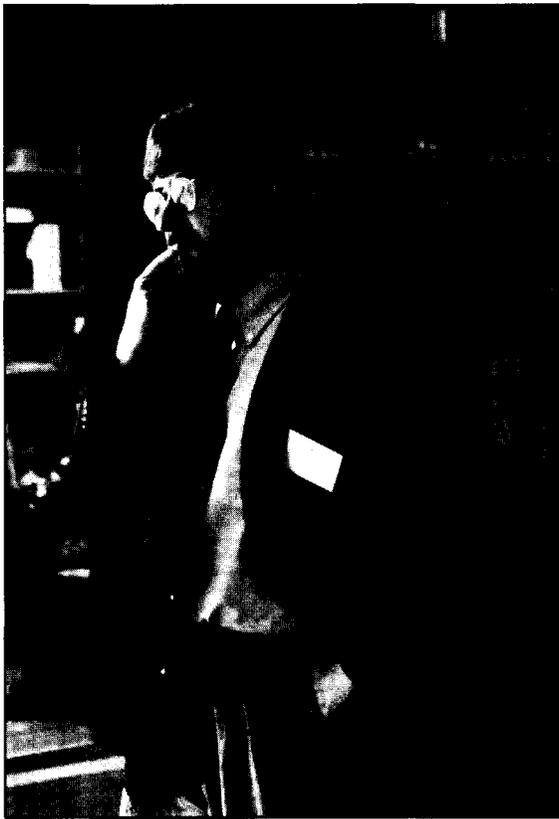
In a presentation titled "A Perspective on 'Intelligence,'" Chilton, an associate professor at UMD, said he was not specifically addressing the recent book *The Bell Curve* (R.J. Herrnstein and C. Murray, 1994). Rather, he was addressing issues that have been around for a hundred years. "Well before *The Bell Curve* hit the presses," Chilton said, "I sensed there was something wrong with this debate."

The argument for heritable intelligence, as Chilton summarized it, goes like this: Observers find high intercorrelation among mental traits and high correlation between those traits and success in life, even after accounting for gender, socioeconomics, and other variables. Those traits are interpreted as "intelligence" and judged a thing to be rewarded. Distinguishing the "intelligent" from the "not-intelligent" becomes justification for discrimination, Chilton noted.

While Chilton opposes the discrimination that argument leads to, "I'm not satisfied with the standard replies to that argument," he said. Chilton's presentation was a critique of those replies and presentation of an alternative.

The first standard reply attacks the data, Chilton argued. Because some prominent researchers have lied regarding their observations of inherited differences in intelligence, some of *The Bell Curve*'s opponents argue that all such observations are wrong and we should pay them no attention. Chilton objected that refusing discourse will not resolve this or any other issue. He also said that "if mental capacities are in fact heritable to any extent, 'fighting the data' is a false trail."

The second standard reply to *The Bell Curve* attacks the interpretation of the data. Chilton used Stephen Jay Gould as an example, especially Gould's book *The Mismeasure of Man* (1981). As Chilton described it, Gould attacks the inter-



Art Jipson of Miami University of Ohio studies the minds of white supremacists.

Photo by Phil Norcross

pretation of such data on statistical, causal grounds; he points out that *correlation* is not the same as *cause*. To argue that the correlation among IQ tests proves the underlying cause is roughly the same fallacy, said Gould and Chilton, as arguing that because house fires and fire hydrants tend to concentrate in the same locations, hydrants cause fires. "But Gould neglects to offer an alternative interpretation for the correlation. He simply makes the banal observation that the connection is not necessarily proven," said Chilton. "We have to do better than that."

The third standard reply to arguments like those in *The Bell Curve*, said Chilton, is a call for change in how we distribute resources. Chilton paraphrased it thus: "Be

nice. Sure they're stupid, but they're also Americans. It's not fair that smart people are compensated more than stupid people." Chilton objects to that reply because it still denigrates people who don't have the "approved" skills. "It's patronizing," he said. "And when economic conditions are bad, as they are now, it will not protect people."

Chilton closed by outlining his reply to arguments that inheritance determines intelligence and justifies discrimination: "I propose," he said, "that we re-interpret in terms of the social norms of what we value. People have an enormous variety of capacities, but our society is organized to take advantage of just one set of them, and to reward only those. In the lottery of life, people who have those capacities get rewarded, and they have the time and resources to develop other capacities. If you don't have those capacities, you're oppressed, and all your skills are pressed down. That's what causes the correlation between a single, narrow capacity, called 'intelligence,' and success in life."

{Next Page}

“We need to turn our attention to honoring a true diversity,” said Chilton, “and to a genuine appreciation for many forms of capacity, to appreciation of all the skills. That’s a society that I would like to live in and that we should go toward.”

Ultrasound Helped Turn Fetuses into People

Andrea Sachs traced a correlation between reproductive politics and the use of sonograms in prenatal care. “Ultrasound contributes to the social construction of the fetus as a human being,” she argued.

Sachs made the disclaimer that she did not mean to “cast aspersions” on ultrasound technology. Her purpose, she said, was to show the political implications of ultrasound—“to show, when the pebble dropped in the water, how the ripples spread.”

Sachs also seeks to explore such questions as these: “How did the unborn become an image for a billboard? What does it mean that a photo of a fetus is on the cover of *Life* magazine and in family albums? What does it mean that women’s bodies have become transparent?”

Sachs is a doctoral student in the Program in American Studies on the Minneapolis campus. She titled her presentation “‘Open Up a Few Uteruses’: Fetal Personhood and the Reverberations of Ultrasonography.” And she acknowledged drawing directly from the work of Barbara Duden, Rosalind Pollack Petchesky, and Michel Foucault.

An ultrasound image is “a picture of a noise,” as Sachs described it. The technology measures the density of tissue by measuring sound reflected and refracted by it. The sound data is then converted to an image that looks like a fetus, but only to people accustomed to viewing such images, said Sachs. Using ultrasound to image a fetus became common practice in the United States during the mid-1980s, she said.

The ability to make such images of fetuses, said Sachs, further transfers authority over pregnancy away from pregnant women and to medical practitioners.

“Fetal imaging is a form of surveillance,” said Sachs. “Reproductive health can be seen as a disciplinary system: It monitors. It keeps records. We make women docile, urging them to do as they’re told in order to be healthy bodies.” Sachs did not emphasize this point, and sought to avoid sounding too critical by acknowledging that such surveillance has health benefits, and that many women willingly cooperate.

Most of Sachs’ attention went instead to the ways in which “fetal autonomy” now serves “New Right” politics.

“Seeing the fetus can render the woman invisible,” she argued, which tends to grant the fetus increased autonomy and

public protection. For some people, she said, “the fetus is a baby occupant; it owns its mother the way you or I own land.

“So the New Right transfers care of fetuses away from pregnant women and to the state, and it focuses on abuse of the fetus rather than the social conditions of the woman,” said Sachs. “The womb becomes an ecosystem, or an empty space, or a hostile, toxic, waste dump. It’s a short trip from protecting the fetus’ health to protecting the fetus from the mother—to making the fetus and mother adversaries.”

How do White Supremacists Think?

The FBI wanted to question Art Jipson shortly after his presentation in Duluth. Jipson describes himself as one of only ten scholars in the United States who do field research on white supremacy sects. Hence the FBI wanted his help in understanding the Oklahoma City bombing.

Jipson, a sociologist from Miami University of Ohio and a University of Minnesota alumnus, has spent two years inter-

White supremacists are school board members and county sheriffs. They are sophisticated and have a historical tradition. There is strong solidarity among them, and their culture is spreading throughout the U.S.

— Art Jipson

viewing members of the Ku Klux Klan, the Aryan Nations, and similar groups. He seeks an accurate description of what white supremacists believe, because he trusts that knowledge can help prevent hate crime. His presentation was titled “The Popular Culture of White Supremacy: Factions and Issues.”

“We must secure the existence of our people and a future for our children”—that slogan fairly summarizes much of what drives white supremacists, said Jipson. “White supremacists believe they are martyrs,” he said. “They have been denied a place, a community, a nation. White supremacists see every major war in history as a war against them.”

There was, of course, an urgency to Jipson’s presentation. He is anxious that people take white supremacists seriously. “It is time to recognize the movement,” he said. “They are school board members and county sheriffs. They are sophisticated and have a historical tradition. There is strong solidarity among them, and their culture is spreading throughout the U.S.”

White supremacists see themselves as struggling against “ZOG,” the “Zionist Occupation Government,” said Jipson.

{Next Page}

ZOG, they say, is a cabal of Jews and Africans that is taking over the United States and other countries and seeks to exterminate whites. Political power, say the supremacists, should be concentrated at the county level. Any higher government is ZOG.

White supremacists do not think of themselves as racists, said Jipson. They call themselves “racialists, people who protect their own.” “Their own” are their “brothers and sisters” of pure Aryan lineage. Just kissing a black person will taint that purity. A white woman who does so is lost, but there are rituals for repurifying a white man.

Within those generalizations, said Jipson, there are five generally recognized taxa of white supremacists: “White Supremacists per se believe white people are superior and justified in ruling; in fact, whites do other people a favor by ruling. “Neo-Nazis” or “National Socialists” see themselves as progressive and leftist; they take a “long view” of history, profess racialism, and believe they should serve as the political “vanguard” because democracy is corrupt and evil. The “White Nationalist,” “Constitutionalist,” or “Patriotic Militia” movement concentrates on taking over a homeland,” said Jipson. “Separatists,” he said, is a vaguely defined catch-all term.

The “Christian Identity” movement—the “most fascinating” group to Jipson—thinks white people are the “true Israelites,” or the lost tribe. The movement’s “two-creation” theory holds that the creator first made the “mud people,” who are little better than animals, then he made white human beings, namely Adam and Eve. The movement knows that dark-skinned people are mud people because they do not blush, hence they have no consciences, hence they have no souls. Jews, says the movement, are the children of Cane and the offspring of Satan.

Sensational Journalism Threatens Democracy

Anthropologist Elizabeth Bird asked her research subjects to watch video recordings of traditional TV network news and recordings of what she called the “new news”—the tabloid and talk shows. Then Bird recorded her subjects’ discussion of what they’d seen. “They wanted to talk about ‘Current Affairs’ and ‘Unsolved Mysteries,’” Bird found. “They couldn’t remember the network news.”

Bird is head of the University’s Department of Interdisciplinary Programs in Duluth and a long-time student of tabloid print journalism. Her book on the subject is *For Enquiring Minds: A Cultural Study of Supermarket Tabloids* (University of Tennessee Press, 1992). In her April presentation, “Is It Real, or Is It News?: ‘New News’ and the Perception of Reality of Contemporary Culture,” Bird described her preliminary investigation of broadcast journalism.

The glory days of TV network news, said Bird, began about 1963, when it covered the Kennedy assassination. There was no competition; the networks were profitable; broadcast was regulated. Those days ended about 1983, when cable TV entered the competition and when business executives stopped entrusting local news to journalists. Over the course of the 1980s, said Bird, the networks’ share of the news audience

“New news” is a random stream of personal stories with no rational coherence. It replaces rational debate. It obliterates the political and validates the irrational. — Elizabeth Bird

declined from 90 percent to 60 percent. That’s when network news began to adopt the pace and style of TV in general and of tabloid journalism.

One of the chief distinguishing features of new news and tabloid broadcast journalism, according to Bird, is the predominance of the human-interest story. “There is less hard news and more features, because inverse pyramids are not memorable—personal stories are memorable.”

Bird acknowledged that there is a long-standing tradition of putting a face on the hard news, “and I wouldn’t argue with it,” she said. But she does argue with human interest features of the kind that now predominate because they engage only the emotions. “New news is a random stream of personal stories with no rational coherence. It replaces rational debate. It obliterates the political and validates the irrational.”

The other chief fault of the new news, said Bird, is the dramatization. “New news has gone a step further than sensationalism by reenacting what it can’t film live.” As an example, Bird cited a local news dramatization that showed a half-dozen teens overturning gravestones. The news reporters knew gravestones had been overturned, said Bird, “but there was no evidence a group of white teens did it.” A local news broadcaster will shrug off criticism for such work, said Bird, by calling it “just another way to enhance the story.” Audiences, on the other hand, will tend to mistake fiction for fact.

Bird’s chief concern is that new news will undermine democracy by causing “a split between those who are informed and those who think they are informed,” as she put it. “Classic broadcast news may have been biased, but at least it was a shared public forum. It may seem that broadcast news is more democratic now because there are more outlets, but the coverage is no broader. They all cover the same stuff—there’s more air time, not more information.”

By Phil Norcross

Graduate School News

Frances Lawrenz is New Assistant Vice President for Research and Associate Dean of the Graduate School

On May 16 Frances Lawrenz began her duties as Assistant Vice President for Research and Associate Dean of the Graduate School, a half-time position previously held by Acting Vice President for Research and Acting Dean of the Graduate School Mark Brenner. A leading international figure in the field of educational program evaluation, Professor Lawrenz will continue half time as a faculty member in the College of Education and Human Development's Department of Curriculum and Instruction.

Professor Lawrenz gained extensive experience with the development and implementation of research policy while working for the National Science Foundation (NSF), where she authored its evaluation guide for principal investigators and wrote policy statements for the Division of Research, Evaluation, and Dissemination for use within NSF as well as in congressional testimony. She also served on a committee under the aegis of the Federal Coordinating Council for Science, Engineering, and Technology that developed strategic plans for the coordination of evaluation policy for all federal agencies that fund research and education in these areas.

Professor Lawrenz has also been principal investigator or evaluator of grants from private foundations, state agencies, and industry. She has directed sixteen grants and is presently directing a four-year \$1 million grant working with assessment in local school districts. In addition, she is evaluator of three large (\$1 million to \$6 million) projects in Colorado, Montana, and Wisconsin.

Throughout her career at the University of Minnesota, Professor Lawrenz has been involved extensively in graduate education, as director of graduate studies for the Department

of Curriculum and Instruction, and as a member of the University-wide committee that reviews graduate programs and of the Graduate School's policy and review council for education and psychology. She is also a member of the College of Education and Human Development's committee charged with development of policy for the college.

Her academic record is also impressive, including over 47 articles in refereed journals, 12 book chapters, 3 curriculum projects, over 65 printed evaluation reports, and assorted research reports. She recently spent two quarters on a Fulbright award providing evaluation services in Africa.

Professor Lawrenz received her Ph.D. in education (with related fields in chemistry and mathematics) in 1974 from the University of Minnesota, having received a B.S. in chemistry and an M.A. in education also from the University. She served on the faculty of Arizona State University before coming to Minnesota in 1986.



Frances Lawrenz

Proposal Sought for Placement of Interdisciplinary University Professorship

Proposals are invited for the placement of the interdisciplinary Fesler-Lampert University Professorship, an endowed chair established in the Graduate School about a decade ago by David R. Fesler. The first occupant of the chair was Professor Irving Biederman, in the area of cognitive sciences and artificial intelligence, who has since left the University. The chair is not committed to a specific field, department, or program in perpetuity, and departments and programs that wish to be considered as a home for the chair are asked to submit a proposal by July 14. For details on preparing a proposal, please see the May 10 letter sent to department heads/chairs and deans by E. F. Infante, senior vice president for academic affairs, and Mark Brenner, acting vice president for research and acting dean of the Graduate School.

Graduate School News

Fulbright and Other Foreign-Study Grants

The purpose of the Fulbright program is to increase mutual understanding between people of the United States and other countries through the exchange of people, knowledge, and skills. Approximately seven hundred grants are available to over one hundred countries. Applicants are asked to outline study plans or research projects that can be completed in one academic year and that relate to the resources of the host country. Applicants must have proficiency in the written and spoken language of the host country, must be U.S. citizens, and must have earned a bachelor's degree or its equivalent before their participation in the program.

University of Minnesota applicants are interviewed by an internal faculty committee; their applications are then forwarded to the Institute of International Education for further review by the National Screening Committee. Following are the recipients from the University of Minnesota for 1995-96.

Fulbright Recipients

David L. Aagesen

Country: Argentina

Major: Geography

Adviser: Connie H. Weil

Mr. Aagesen's dissertation research will determine if correlations exist between farmers' land tenure, management strategies, and natural resource degradation in the Percey River watershed in the southern Andes of Argentina. Much of this land belongs to the province of Chubut, and the degree of land occupation varies. Mr. Aagesen hypothesizes that tenure insecurity has allowed for fewer management options, provided fewer incentives for conservation measures, and resulted in degradation of the resource base. He believes sound development plans must consider the possible beneficial effects of land titling on resource stewardship and conservation. Mr. Aagesen will conduct archival work in Argentina to reconstruct the land-tenure and economic history of the area, interview farmers, obtain socioeconomic data, and study aerial photographs and satellite data to assess natural resource trends and conditions.

Laura L. Anderson

Country: Germany

Major: German

Ms. Anderson, currently completing her B.A. in German, has been awarded an English teaching assistantship to Germany. Because she plans to teach German at a U.S. high school, in Germany Ms. Anderson will focus on becoming fluent in German and on understanding German culture. She also plans to attend university courses in the politics and literature of German-speaking countries. Her college background includes participation in a year-long total immersion program in German studies.

Leigh A. Clemons (alternate)

Country: Germany

Major: Theatre Arts

Adviser: Michal A. Kobialka

Ms. Clemons's Ph.D. research will examine the Nazi's notion of the "degenerate" artist as it relates to German theatre, particularly to German expressionism. The starting point for her study is the "Entartete Kunst" exhibit held in Munich in 1937. Of the 112 artists represented, 10 were also engaged in theatrical activity. Regarding these 10, previous scholarship has examined their roles as artists in the art exhibit separately from the ways in which the Nazis discussed their works. Ms. Clemons plans to bring together these areas of research by combining social history's emphasis on autobiography and everyday experience with contemporary theories of dramatic and performance analysis. In Germany, she will visit numerous museums and archives to view many of the works included in the "Entartete Kunst" and to examine diaries, correspondence, and other writings of the pertinent artists.

Susan E. Feinberg

Country: Canada

Major: Business Administration

Adviser: Srinivasan Balakrishnan

Ms. Feinberg's dissertation will contain a detailed case analysis of the Canadian chemicals industry in order to examine the ways in which different firms within an industry have responded to trade liberalization, including the resources and strategies of those firms before and after liberalization. She will conduct interviews with executives of chemical companies doing business in Canada during 1982-1992. She will also examine reports, memos, and speeches relating to trade liberalization; articles from regional newspapers and magazines; and data from industry trade associations. Through elaboration of the firm-level characteristics that predict adjustment patterns, this research will investigate whether the competitiveness of individual firms, not industries, is most important in predicting the impact of market liberalization.

Karin L. Goetsch

Country: France

Major: Linguistics

With a B.A. in French and international economics, and a B.A. in linguistics nearly completed, Ms. Goetsch will serve as a teaching assistant of English in France. She will also take university courses in French linguistics and civilization and pursue a project on the issues surrounding the preservation of the French "standard." She is most interested in the influence of foreign borrowed words and in variations in familiar French, particularly among the younger generations. In France she will be able to encounter and analyze French conversation on all levels, gain exposure to the mass media, which is critical to a study of language evolution; conduct interviews;

(Next Page)

Graduate School News

and access scholarly sources in libraries and archives. On her return, Ms. Goettsch plans to pursue graduate studies in French linguistics and eventually to teach French at a secondary or university level.

Louise H. Guenther

Country: Brazil

Major: History

Adviser: Stuart B. Schwartz

Throughout the nineteenth century, sizable populations of British merchants and professionals lived in the northeastern Brazilian cities of Salvador and Recife, where they controlled a good share of the slave-based sugar trade. Ms. Guenther's dissertation research will examine the ways in which abolitionist activity by the British government contradicted the interests of British investors and entrepreneurs, how this contradiction was experienced socially by the British living in these merchant enclaves, and the effects of their responses upon Brazilian society. A comparative approach promises to be fruitful because while Recife became a center of abolitionist activity, Salvador continued its staunch support of slavery. Ms. Guenther will examine newspaper editorials, consular reports, British social club archives, Anglican church records, and family papers.

Torild M. Homstad

Country: Norway

Major: Scandinavian Studies

Adviser: William E. Mishler

The primary focus of Ms. Homstad's dissertation will be a close textual analysis of the creative writings of Nini Roll Anker (1873-1942), a prominent Norwegian novelist and social activist in the feminist, pacifist, and labor movements. Anker's central concerns were the values, privileges, and limits associated with class membership and gender, and the ways class and gender affect individuals and society. Using the tools of formalist and feminist literary analysis, Ms. Homstad will chart the development in Anker's work of the concepts of gender and class in society. She will also place Anker in a sociohistorical perspective and evaluate her significance as a writer and public figure by examining her personal papers, correspondence, and work as president of the Author's Union.

Angela H. Karstadt (alternate)

Country: Sweden

Major: English

Adviser: Genevieve J. Escure

Ms. Karstadt's Ph.D. research focuses on issues of language variation and ethnic identity among older Swedish Americans. For three years she has documented the speech of Swedish Americans in Lindsborg, Kansas, and Minneapolis, Minnesota, who speak a hybrid of English and Swedish. Her research suggests that these speakers regard Swedish-accented English as a positive emblem of their heritage. The Dialect Archives of Uppsala University in

Sweden has a collection from the 1960s of tape-recorded interviews with nearly 500 Swedish Americans, some of whom participated in Ms. Karstadt's recent fieldwork. Her analysis of syntax using these tapes and her recent work will provide a rare opportunity to document longitudinal changes related to ethnic bilingualism. She will also conduct limited fieldwork in the province of Dalarna, as many of the immigrants she has studied have roots there.

Emily A. Kuntz

Country: Germany

Majors: Speech Communication and German

Ms. Kuntz, who has a B.A. in speech communication and German, will serve as a teaching assistant of English while in Germany. Because her goal is to pursue graduate study in teaching English as a foreign language after her year abroad, she will also take university courses in linguistics and the development of English or German. As an exchange student to Austria after high school, Ms. Kuntz gained a healthy respect for the process of learning a foreign language and the effort required to adjust to another culture, and she feels she will be able to give useful suggestions and encouragement to her students. Ms. Kuntz has also tutored individuals and taught in a classroom setting through her volunteer work with the Minnesota Literacy Council. She is looking forward to learning the dialect specific to her area of Germany and immersing herself in the culture.

Michelle J. Markley

Country: New Zealand

Major: Geology

Adviser: Christian Teyssier

Until recently, structural geologists and plate tectonicists viewed plates sliding past each other (e.g., the San Andreas Fault) and head-on collisions (e.g., the Himalayas) as the most common tectonic settings for crustal thickening and deformation. Most plates, however, interact obliquely, where the angle between the direction of plate motion and the plate boundaries is between 0 degrees and 90 degrees. The focus of Ms. Markley's dissertation is a comparison between modern and ancient mountain belts in this tectonic setting in order to better interpret the structures observed in ancient mountain chains around the world. South Island, New Zealand, is an ideal area to study an active mountain belt at an oblique plate margin. Her work there will directly address the problems and hypotheses raised in attempting to interpret the ancient oblique plate margins of the European Alps, where she has worked for the past two years.

Charles E. Pederson (alternate)

Country: Iceland

Major: Scandinavian Studies

Adviser: Anatoly Liberman

As an M.A. student, Mr. Pederson has been studying phraseology in Old Norse and has completed the first year of an Icelandic for foreigners course at the University of Iceland.

Graduate School News

He would like to participate in the second year of the course, because he is convinced of the value of Icelandic for almost any other work in Germanic philology. He would at the same time be able to continue with his research in Old Norse phraseology, which is a possible dissertation topic for him. He would make use of the University of Iceland dictionary project and the resources of the Arni Magnusson Institute, one of the two best research libraries in the world for Old Norse subjects.

James D. Roth

Country: Canada

Major: Ecology

Adviser: Peter A. Abrams

Arctic fox populations often exhibit large, regular, four-year oscillations, closely following changes in lemming populations. However, arctic foxes also follow polar bears onto the sea ice and scavenge on the remains of bear-killed seals. To help determine the effects of scavenging on predator-prey dynamics, Mr. Roth's dissertation study will attempt 1) to determine the proportion of the arctic fox diet that is scavenged from marine-based sources by using recent advances in stable-carbon-isotope analysis of tissues, in this case from foxes harvested in winter; 2) to verify seasonal differences in arctic fox foraging patterns through analysis of tissue biopsies from anesthetized foxes; 3) to determine how scavenging relates to densities of inland prey by using mark-recapture methods; and 4) to incorporate this data into a mathematical model, which will require den surveys to estimate population fluctuations.

Andrew M. Vonnegut

Country: Bulgaria

Major: Agricultural and Applied Economics

Adviser: Claudia A. Parliament

Since the end of the last decade, with the dismantling of the centrally planned economies in Eastern Europe, most economic theory has addressed macro-economic factors. Mr. Vonnegut's dissertation research will look instead at how agents at a micro-economic level (firms, households) respond to shifts in these macro-economic conditions, for even as liberalization proceeds in the macro-economy, the micro-economy has lagged and transition has stalled. Mr. Vonnegut will look at the importance of historical change and the residual effect of pre-existing sets of institutions in order to address the question of whether, given current policy and directions, the turmoil will lead to the desired goal of a market structure. He also will attempt to determine which aspects of change may be generalized to other situations and which are primarily local. Bulgaria was chosen because on the eve of transition, it maintained a rigid, traditional planning system that was not broken up soon after.

DAAD (German Academic Exchange) Recipient*

Karyn M. Ball

Country: Germany

Major: Comparative Studies in Discourse and Society

Adviser: Jochen Schulte-Sasse

Ms. Ball's Ph.D. research will assess the German reception of U.S. films about the Holocaust by comparing their effects on the mass media and academic journals and by judging their influence on film criticism and on subsequent German productions treating related themes. Specifically, she will contrast the reception of the *Holocaust* television miniseries (1978) with response to Spielberg's *Schindler's List* (1993). She seeks to understand the extent to which the importation of U.S. films in recent years has influenced the ongoing academic debate over the appropriate form of representing Holocaust memory as well as the general contestation over the relationship between German national identity and historical consciousness. How, in other words, do U.S.-produced "memories" of the Holocaust affect Germans' views of their collective responsibility for their own past?

- * DAAD recipients are chosen through the same process as Fulbright Scholars.

Local Symposia and Conferences

July

Lepidopterists' Society, 46th Annual Meeting

Symposia on conservation and enjoyment of *Lepidoptera*, on the biology of caterpillars, and on *Lepidoptera* mating behavior. Also a slide show, collecting opportunities, access to museum specimens, and a juried art exhibit.

- Thursday through Sunday, June 29-July 2, Bell Museum of Natural History
- Call Kelly Fisher, 612/625-8215 or 800/367-5363

Vehicle Emissions and Air Quality Symposium:

A Forum on Prediction, Assessment, & Public Policy

For planners, regulators, engineers, researchers, economists, and others, this symposium will work to correct inconsistencies among the phenomena being measured, those being modeled, and those being forecast. It will also address the uncertainties in the field and discuss how public policy may evolve as a result of new knowledge. Topics include emission inventories, federal policy, new technologies, policy expectations vs. modeling capabilities, and the effectiveness of control programs.

- Wednesday through Friday, July 26-28, Radisson Metrodome
- Sponsored by the Center for Transportation Studies
- Call Catherine Ploetz, 612/626-2259

Orr Earns Kilby Award

Harry Orr, professor in Laboratory Medicine and Pathology, received the Kilby Award in May for his research, with Huda Zoghbi of Baylor University, that led to discovery of the gene responsible for ataxia. Kilby Awards are meant to bring attention to "creative and innovative talent." The program began in 1989 and is named for Jack St. Clair Kilby, inventor of the integrated circuit.

Orr's most recent research grant is an NIH program project grant for the study of inherited spinocerebellar ataxias. The five-year grant—\$780,000 for calendar 1995—funds four research projects and a "clinical core." It will bring together scientists from three departments who have expertise in genetic, molecular, and pathophysiological approaches.

August

12th International Symposium on Plasma Chemistry

This is the preeminent international symposium on plasma chemistry, covering topics from basic physics and chemistry to industrial processing, and including high-pressure thermal plasmas, high-pressure nonequilibrium discharges, and low-pressure nonequilibrium plasmas. The program includes papers, posters, and plenary lectures. A proceedings volume will be available at the symposium.

- Monday through Friday, August 21-25, Willey Hall

Summer School on Plasma Chemistry

Two simultaneous courses will provide introductions to plasma chemistry and processing for engineers, scientists, and managers—one course will deal with low-pressure nonequilibrium plasma technology, one with thermal plasma technology.

- Thursday through Saturday, August 17-19, Minneapolis campus

Workshop on Industrial Applications of Plasma Chemistry

Two simultaneous sessions will focus on recent developments in industrial use of plasma chemistry and on specific problems associated with particular applications—one session will address low-pressure nonequilibrium plasma applications, one will address thermal plasma applications.

- Friday through Saturday, August 25-26, Minneapolis campus

Industrial Exhibition on Plasma Chemistry

Displays and demonstrations of equipment for diagnostics, instrumentation, and processing.

- Monday through Wednesday, August 21-23, Willey Hall

These four plasma chemistry events are sponsored by the International Union of Pure and Applied Chemistry, and the American Physical Society.

For information call Catherine Ploetz, 612/626-2259, cploetz@mail.cee.umn.edu

Kersey Earns Lifetime Achievement Award

John Kersey, M.D., received a Lifetime Achievement Award from the Medical Alley organization of the Minnesota health care industry last March. Kersey is Children's Cancer Research Fund Land Grant Professor, director of the University's Bone Marrow Transplantation Program, and acting director of the University's Cancer Center. Kersey's research concentrates on recombinant immunotoxins for treatment of leukemia and lymphoma; he has been supported by an NIH Outstanding Investigator Award since 1988. Kersey earned his M.D. at the University of Minnesota in 1964 and joined the faculty in 1971; he is now a professor in the Departments of Pediatrics and of Laboratory Medicine and Pathology.

Journal Articles by University Authors

Listed below are some of the recent publications by University of Minnesota faculty, staff, and students, as reported by the authors and by "Research Alert," a publication of the Institute for Scientific Information.

Please send news of your publications to Phil Norcross, editor, *Research Review*, phil@ortta.umn.edu.

Kumar, V., Shekhar, S., Amin, M.B. A scalable parallel formulation of the backpropagation algorithm for hypercubes and related architectures. *IEEE Transactions on Parallel and Distributed Systems* 5.10 (Oct. 1994): 1073-1091.

Kumar, V., Gupta, A. Analyzing the scalability of parallel algorithms and architectures: a survey. *Journal of Parallel and Distributed Computing* 22.3 (Sept. 1994): 379-391.

Gonzales, J.F., Hu, W.S. Pentachlorophenol biodegradation, simple models. *Environmental Technology* 16.3 (March 1995): 287-293.

Shultz, J.J., et. al. Comparison of exertion required to perform standard and active compression-decompression cardiopulmonary resuscitation. *Resuscitation* 29.1 (Feb. 1995): 23-31.

Mansur, L.M., Orf, J.H. Agronomic performance of soybean recombinant inbreds in northern USA and Chile. *Crop Science* 35.2 (March-April 1995): 422-425.

Wilt, T.J., Brawer, M.K. The prostate cancer intervention versus observation trial: a randomized trial comparing radical prostatectomy versus expectant management for the treatment of clinically localized prostate cancer. *Cancer* 75.7 (1 April 1995): 1963-1968.

Garfield, J. How students learn statistics. *International Statistical Review* 63.1 (April 1995): 25-34.

Ren X.F., Wei, J.C. Counting peaks of solutions to some quasi-linear elliptic equations with large exponents. *Journal of Differential Equations* 117.1 (20 March 1995): 28-55.

Kuechle J. Ecology—the last word in biology textbooks. *American Biology Teacher* 57.4 (April 1995): 208-210.

Hornbuck, K.C., et. al. Assessing annual water-air fluxes of polychlorinated biphenyls in Lake Michigan. *Environmental Science and Technology* 29.4 (April 1995): 869-877.

Myerspay., S.C., Hui, D.Y., Brockman, H.L., Schroeder, F. Cholesterol esterase: a cholesterol transfer protein. *Biochemistry* 34.12 (28 March 1995): 3942-3947.

Zahar, M., Smith, D.E., Martin, F. Vitamin A distribution among fat globule core, fat globule membrane, and serum

fraction in milk. *Journal of Dairy Science* 78.3 (March 1995): 498-505.

Chen U.R., Schmidt, E.L. Improving aspen kraft pulp by a novel, low-technology fungal pretreatment. *Wood and Fiber Science* 27.2 (April 1995): 198-204.

Siegel, D.I., Reeve, A.S., Glaser, P.H., Romanowi, E.A. Climate-driven flushing of pore water in peatlands. *Nature* 374.6522 (6 April 1995): 531-533.

Fitch, L.L., et. al. Effect of aspirin use on death and recurrent myocardial infarction in current and former cigarette smokers. *American Heart Journal* 129.4 (April 1995): 656-662.

Basak, S.C., Grunwald, G.D. Estimation of lipophilicity from molecular structural similarity. *New Journal of Chemistry* 19.2 (Feb. 1995): 231-237.

Aarhus, R., Gee, K., Lee, H.C. Caged cyclic ADP-ribose: synthesis and use. *Journal of Biological Chemistry* 270.13 (31 March 1995): 7745-7749.

Jensen, M.S., Finley, F.N. Teaching evolution using historical arguments in a conceptual change strategy. *Science Education* 79.2 (April 1995): 147-166.

Mandelba, R.T., Allan, D.L., Wackett, L.P. Isolation and characterization of a *Pseudomonas* species that mineralizes the s-triazine herbicide atrazine. *Applied and Environmental Microbiology* 61.4 (April 1995): 1451-1457.

Redmon, J.B., Kubo, S.H., Robertson, R.P. Glucose, insulin, and glucagon levels during exercise in pancreas transplant recipients. *Diabetes Care* 18.4 (April 1995): 457-462.

Kruglov, A.V. Methanol synthesis in a simulated countercurrent moving-bed adsorptive catalytic reactor. *Chemical Engineering Science* 49.24A (December 1994): 4699-4716.

Ashdown, S.P., Delong, M. Perception testing of apparel ease variation. *Applied Ergonomics* 26.1 (Feb. 1995): 47-54.

Barnes-Josiah, D., Potter, J.D., Sellers, T.A., Himes, J.H. Early body size and subsequent weight gain as predictors of breast cancer incidence. *Cancer Causes and Control* 6.2 (March 1995): 112-118.

Rudman, L.A., Gonzales, M.H., Borgida, E. My transplant is my life: compliance status as a moderator of differential susceptibility to item context effects. *Personality and Social Psychology Bulletin* 21.4 (April 1995): 340-348.

Peck, J. TV talk shows as therapeutic discourse: the ideological labor of the televised talking cure. *Communication Theory* 5.1 (Feb. 1995): 58-81.

National Institutes of Health

Revision of NIH Career Development Grant Mechanisms

This notice appeared in the April 28, 1995, issue of the NIH Guide.

Six new career development grant mechanisms (K-series) replace 14 previous awards. The new grant mechanisms have been developed to streamline the system of career awards. They do not change the instructions for preparing career award applications, nor do they appreciably change the eligibility of individuals for career award support. They do, however, simplify the career grant options so that prospective applicants can more easily understand how these awards mesh with their own career goals and can be used to enhance the development of their research skills.

Prospective applicants are advised that some of the new awards are not supported by all of the NIH institutes and centers (ICs). Applicants are strongly encouraged to examine, prior to developing an application, the list of participating ICs for each program announcement and to make contact with one of the individuals listed under the "Inquiries" section of each individual program announcement.

The new awards are organized as listed below. Copies of complete program descriptions are available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu.

Mentored Research-Scientist Development Award (K01)

- Participating ICs are NIA, NIAAA, NIAMS, NCI, NIEHS, NIMH, NINDS, NINR, NCHGR, and NCRR.
- This award provides a research scientist with an additional period of sponsored research experience as a way to gain expertise in a research area new to the applicant or in an area which would demonstrably enhance the applicant's scientific career. This award is generally reserved for individuals interested in switching to a new research field, for individuals who have interrupted their careers because of illness or pressing family care responsibilities, or for faculty at minority institutions who wish to enhance their capacity for independent research. This mechanism replaces the K01, K14, K17, and K21 mechanisms.

Independent Scientist Award (K02)

- Participating ICs are NIA, NIAAA, NIAID, NIAMS, NICHD, NIDCD, NIDR, NIDDK, NIDA, NIEHS, NHLBI, and NIMH.
- This award supports recently independent scientists with outstanding potential to become future leaders in biomedical, behavioral, or clinical sciences. This mechanism replaces the K02 and K04 mechanisms.

Senior Scientist Award (K05)

- Participating ICs are NIAAA, NIDA, and NIMH.
- This award supports senior scientists who are recognized leaders in their fields. This mechanism is the same as the old K05 mechanism.

Academic Career Award (K07)

- Participating ICs are NIA, NIAAA, NIAMS, NCI, NIEHS, and NIMH.
- This award supports individuals who wish to develop expertise in a specific academic area or acknowledged experts who wish to develop curricula and research capacity within an academic institution. This mechanism is the same as the old K07.

Mentored Clinical Scientist Development Award (K08)

- Participating ICs are NIA, NIAAA, NIAID, NIAMS, NCI, NICHD, NIDCD, NIDR, NIDDK, NIDA, NIEHS, NEI, NHLBI, NIMH, and NINDS
- This is an individual award for clinicians who need an intensive period of mentored research experience. It replaces the K08, K11, K15, and K20 mechanisms.

Mentored Clinical Scientist Development Program Award (K12)

- Participating ICs are NIA and NIDR.
- This is a variant of the K08 mechanism. It replaces the K12 and K16 mechanisms.

If you need additional information about the policies and procedures for career awards or you need assistance in identifying an appropriate contact, you may write or call

Dr. Walter Schaffer
Research Training and Special Program Office
National Institutes of Health
Building 31, Room 5B44
Bethesda, MD 20892
301/496-9743
fax 301/496-0166
e-mail wslq@nih.gov

■ NOAA

Climate and Global Change Program

The Climate and Global Change Program represents a National Oceanic and Atmospheric Administration (NOAA) contribution to evolving national and international programs designed to improve the ability to observe, understand, predict, and respond to changes in the global environment. The long-term objective of the program is to provide reliable predictions of climate change and associated regional implications on time scales ranging from seasons to a century or more. Predicting the behavior of the coupled ocean-atmosphere-land-surface system will be part of a national effort to deal with observed or anticipated changes in the global environment.

In FY96 NOAA will give priority attention to individual proposals in the areas described below. Investigators are asked to specify clearly which of these areas is being pursued. Prospective applicants are encouraged to contact program officers for further information.

- World Ocean Circulation Experiment
- Global Energy and Water Cycle Experiment
- Atmospheric Chemistry
- Climate Change Data and Detection
- Paleoclimatology
- Economics /Human Dimensions of Climate Fluctuations
- Climate Observations
- Marine Ecosystem Response
- Global Ocean-Atmosphere-Land System
- Ocean-Atmosphere Carbon Exchange Study
- Education

Approximately \$16 million will be available for new grants and cooperative agreements. No matching is required.

A strongly encouraged, but optional, letter of intent should be submitted no later than **June 7, 1995**. Fax and e-mail are acceptable for letters of intent only. Applicants should receive notification of the suitability of their intended proposals by June 30.

The final application deadline is **August 8, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. The announcement contains a more detailed description of the program priorities and the names and telephone numbers of contact persons for each program. For further information contact Irma duPree, Office of Global Programs, NOAA, 1100 Wayne Avenue, Suite 1225, Silver Springs, MD 20910-5603; 301/427-2089, x17; fax 301/427-2073; e-mail duPree@ogp.noaa.gov.

■ NASA

Mars Surveyor Program: 1998 Lander and Orbiter Missions Science Instruments

The National Aeronautics and Space Administration Mars Surveyor Program (MSP) will launch two spacecraft to Mars in 1998: an orbiter and a lander. The MSP 1998 orbiter will carry one of the two remaining Mars Observer instruments (the Gamma Ray Spectrometer or the Pressure Modulator Infrared Radiometer) and a camera. The Mars Surveyor Program 1998 lander will soft-land on the surface, carrying an instrument suite which will perform *in situ* investigations to address the science theme "Volatiles and Climate History" on Mars.

NASA therefore announces an opportunity to propose a small camera to be carried by the MSP 1998 orbiter. The three-axis-stabilized orbiter will use aerobraking to achieve a polar, Sun-synchronous orbit around Mars. Instruments will be nadir-pointed throughout the near-circular mapping orbits, which are planned to continue for at least one Martian year.

NASA also announces an opportunity to propose an integrated suite of instruments, or an instrument to be combined with an integrated suite of instruments, or an individual instrument to be included with other individual instruments for the MSP 1998 lander. The solar-powered lander will use an active descent propulsion system, similar to Viking, to land on the surface of Mars. Science instruments may be mounted on an exposed upper deck with thermally sensitive electronics protected inside the lander thermal enclosure. Access to the surface for sample acquisition or deployment of instruments must be proposed as part of the payload. The mission lifetime will depend on the latitude selected for the landing site.

A written notice of intent must be submitted by all prospective proposers by **July 10, 1995**. The notice of intent should briefly describe the objectives of the proposed investigation and include a brief description of the proposed instrumentation.

Final proposals are due **August 8, 1995**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. Reference AO No. 95-OSS-03.

■ Various Foundations and Global Hunger Campbell Soup Foundation

The Campbell Soup Foundation focuses on the link between diet and health, with emphasis on communities where the company operates. Eligible projects include efforts to alleviate and prevent chronic disease through nutrition and biomedical research, dietary and nutritional intervention projects that focus on population groups at high risk of diet-related disease, and nutrition education programs for youths and the general public.

The foundation generally limits grants to \$100,000 and rarely makes multiyear grants.

There is no application deadline for requests under \$20,000. For proposals requesting more than \$20,000 the deadline is **February 28, 1996**. For further information and for specific application requirements, contact Bertram Willis, Secretary, Campbell Soup Foundation, Campbell Place, Camden, NJ 08103-1799.

Land O'Lakes, Inc.

Land O'Lakes education and youth grants reflect the business interests of the company, primarily funding agriculture and cooperative education programs and supporting efforts to build knowledge and leadership skills of rural youth. Land O'Lakes also funds programs that support stewardship of oil and water resources and balance environmental issues against global agriculture and food needs. Grants focus on Idaho, Iowa, Minnesota, Montana, Nebraska, North Dakota, Oregon, South Dakota, Washington state, and Wisconsin.

Most grants range from \$500 to \$500,000.

There is no application deadline. Contact Martha Sakry, Community Relations Director, Land O'Lakes, Inc., 4001 Lexington Avenue North, Arden Hills, MN 55126.

Ruth Mott Fund

The Ruth Mott Fund's environmental focus encompasses alternative agriculture initiatives, including programs that encourage farmers to adopt sustainable agricultural methods and efforts to improve public understanding of agricultural issues. Grants also fund projects that preserve genetic diversity and foster public policies that support sustainable agriculture. Health grants aim to foster awareness of preventive approaches, primarily among low-income groups. Eligible issues include nutrition, fitness, and alcohol and drug use.

About \$3.4 million is available annually with most grants ranging from \$1,000 to \$25,000.

Deadlines are **July 15, November 7, 1995, and March 15, 1996**. Applicants should submit a one-page summary along with a proposal narrative not to exceed 12 pages. For more information contact the Ruth Mott Fund, 1726 Genesee Towers, Flint, MI 48502; 313/232-3180.

International Foundation

The International Foundation aims to help people in the developing world solve their problems, attain a better standard of living, and become self-sufficient. The foundation supports research projects that improve agriculture and supports health and human service programs that address issues of medicine and nutrition. The foundation gives priority to programs that focus on mothers and the very young.

Grants range from \$5,000 to \$25,000.

There is no application deadline; the foundation reviews requests quarterly. Applicants should submit proposals along with a self-addressed, stamped envelope. For further information contact Edward Holmes, Grants Chairman, International Foundation, 10 Park Place, Butler, NJ 07405; 615/598-0894.

■ Center for Transportation Studies Transportation Funding Opportunities

To meet the need for timely information about funding opportunities in transportation, the University of Minnesota Center for Transportation Studies (CTS) has established a test program that uses the Internet to obtain and distribute funding announcements. Dave Lynch, CTS contracts and grants manager, is distributing a list of funding opportunities biweekly. The April lists were sent to select individuals who have an affiliation with CTS, primarily faculty and researchers on CTS councils. Anyone with Internet access and an interest in receiving this information should send a request to Lynch at dlynch@maroon.tc.umn.edu.

■ See NIH Proposal Results Fast on Net

Want to know as soon as possible whether NIH has favored your proposal? NIH award decisions are available via the Internet. Tucker LeBien, professor in Laboratory Medicine and Pathology, reports learning of his recent grant renewal by this route, *before* receiving an award letter from NIH or ORTTA. The database, titled "Computer Retrieval of Information on Scientific Projects" (CRISP), is available via ORTTA's gopher or the NIH home page: *ORTTA gopher/Other resources/NIH gopher/Grants and research/CRISP* or <http://www.nih.gov/grants>.

■ CDC

Public Health Conference Grant Program

The Centers for Disease Control and Prevention (CDC) announces the availability of funds in FY96 for the Public Health Conference Support Grant Program.

The purpose of the program is to provide *partial* support for specific nonfederal conferences in the areas of health promotion and disease prevention information and education programs, *except* HIV infection. Applications are being solicited for conferences on 1) chronic disease prevention; 2) infectious disease prevention; 3) control of injury or disease associated with environmental, home, and work-place hazards; 4) environmental health; 5) occupational safety and health; 6) control of risk factors such as poor nutrition, smoking, lack of exercise, high blood pressure, and stress; 7) health education and promotion; 8) laboratory practices; and 9) efforts that would strengthen the public health system.

There will be active participation by CDC in the development and approval of those portions of the agenda supported by CDC funds. In addition, CDC will reserve the right to approve or reject the content of the full agenda, speaker selection, and site selection.

Potential applicants must submit an original and two copies of a one-page typewritten letter of intent that briefly describes the title, location, purpose, and date of the proposed conference and the size and profession of the intended audience. This letter must also include the estimated total cost of the conference and the percentage of the total cost (less than 100 percent) being requested from CDC.

{Next Column}

The receipt date for letters of intent is **October 9, 1995**. Successful applicants will receive a written notification to submit an application for funding. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. To receive additional information call 404/332-4561. You will be asked to leave your name, address and phone number and will need to refer to announcement number 600.

■ Pediatric AIDS Foundation

Over a five-year period, a maximum of 25 awards will be made to support outstanding investigators whose research will help resolve critical issues in pediatric HIV and AIDS. The end result will be new answers for the treatment and prevention of HIV and AIDS in children.

The first round will provide between \$100,000 and \$150,000 for up to five scientists each year for five years. Applications from individuals from diverse nations and disciplines are encouraged to apply. Each candidate must have an M.D., Ph.D., or D.V.M. degree and be at the associate professor level or above, or be eligible for an associate professor appointment, at the time of application. These awards are not intended for highly established investigators.

Research activities must take place at an accredited nonfederal educational institution or education-affiliated institution. People being recruited but not yet hired will be considered with suitable explanation.

Interested applicants must submit a pre-application package containing the following information in the following order:

- A two-page curriculum vitae with complete mailing information;
- A one-page research plan;
- One letter of recommendation from the applicant's department chair.

The pre-application is due by **August 15, 1995**. Applicants who will be invited to submit full application packages will be notified by October 5. Awards will begin in January, 1996. Send pre-applications to Candace Devine, Pediatric AIDS Foundation, 1311 Colorado Avenue, Santa Monica, CA 90404.

■ Arthritis Foundation

Following are brief descriptions of various awards offered by the Arthritis Foundation. A complete copy of the guidelines and eligibility requirements for each program is available from ORTTA and may be requested by calling 624-9004 or by sending a note to gopher@ortta.umn.edu. The application deadline for all programs is **September 1, 1995**. Application forms may be obtained from the Arthritis Foundation, 1314 Spring Street NW, Atlanta, GA 30309; 404/872-7100 x6311.

Arthritis Investigator Award

The purpose of the Arthritis Investigator Award is to support physicians and scientists in research fields related to arthritis for the period between completion of postdoctoral fellowship training and establishment as an independent investigator. It is a two-year award which may be renewed for a third year. Applicants must have completed a minimum of three and a maximum of seven years postdoctoral research as of the award date; the award is not to be considered an extended postdoctoral fellowship. Applicants must hold an M.D., Ph.D., or equivalent degree and have demonstrated distinction and productivity in research. The award amount is \$49,000 for salary and/or research support; each award is accompanied by a \$1,000 institutional grant.

Biomedical Science Grant

The purpose of the Biomedical Science Grant program is to support high-quality, original biomedical research closely related to understanding the etiology, pathogenic mechanisms, and control of arthritis and related rheumatic diseases in adults and children. Individuals with doctoral degrees (M.D., Ph.D., or equivalent) at the assistant professor level or higher are eligible. Awards will be made for one to three years. Grants are in amounts up to \$75,000 annually.

Clinical Science Grant

The purpose of the Clinical Science Grant program is to encourage and support high-quality, original clinical research on problems closely related to the diagnosis, prognosis, management, and health care delivery and epidemiology of adults and children with arthritis and related rheumatic diseases. Awards will be made for one to three years. Physicians and arthritis health professionals with doctoral degrees at the assistant professor level or higher are eligible. Grants are in amounts up to \$75,000 annually.

Doctoral Dissertation Award

The purpose of the Doctoral Dissertation Award is to advance the research training of arthritis health professionals in investigative or clinical teaching careers as they relate to the rheu-

matic diseases. The award period is one or two years. Awards are designed for doctoral candidates entering the research phase of their programs; a dissertation project is preferred. The research project must be related to arthritis management and/or comprehensive patient care in rheumatology practice, research, or education. Suitable studies include, but are not limited to, functional, behavioral, nutritional, occupational, or epidemiological aspects of patient care and management. Awards may be made for up to \$10,000 per year, depending on the amount of time committed to research, and may be used for salary and/or research expenses.

New Investigator Grants

The purpose of the New Investigator Grant is to encourage Ph.D.-level arthritis health professionals with research expertise to design and carry out innovative research projects related to the rheumatic diseases. The grant is intended to provide support for the period between completion of doctoral work and establishment as an independent investigator. The grant is for one to three years. These awards are for investigators who have received doctoral degrees within the last five years; M.D.s are not eligible. Grants are in amounts up to \$25,000 annually.

Physician Scientist Development Award

The purpose of the Physician Scientist Development Award is to encourage qualified physicians without significant prior research experience to embark on careers in biomedical and/or clinical research related to the understanding of arthritis and the rheumatic diseases. It provides stipend support for the early years of the necessary training period and is a two-year award which may be renewed for a third year. Individuals must have received an M.D., D.O., or equivalent medical degree within the past seven years; completed training in internal medicine or pediatrics; and have completed at least one year of specialty training as of the start date of the award. The stipend ranges from \$27,000 to \$32,000 per year dependent upon relevant postdoctoral experience. Each award is accompanied by a \$500 institutional grant.

Postdoctoral Fellowship

The purpose of the Postdoctoral Fellowship is to encourage qualified physicians and scientists to embark on careers in research related to the understanding of arthritis and the rheumatic diseases. A fellowship provides stipend support for the early years of the necessary training period. This is a two-year award which may be renewed for a third year. The awards are designed for applicants with M.D., Ph.D., D.O., or equivalent doctoral degrees. The stipend ranges from \$25,000 to \$32,000 per year depending upon relevant postdoctoral research experience. Each fellowship is accompanied by a \$500 institutional grant.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have randomly selected awards received by faculty during preceding months. Faculty who have received awards they would like mentioned in a future *Research Review* may send the pertinent data, as exemplified below, to Phil Norcross at ORTTA, phil@ortta.umn.edu.

Proposal and Award Summary

	Number	Amount
Proposals Submitted		
April 1995	340	\$ 78,658,956
Awards Processed		
April 1995	371	34,063,523
Proposals Submitted		
July 1994 - April 1995	3,514	600,916,789
Awards Processed		
July 1994 - April 1995	3,343	352,563,788
Proposals Submitted		
July 1993 - April 1994	3,520	540,052,428
Awards Processed		
July 1993 - April 1994	2,398	218,859,066

Army High-Performance Computing Research Center

Tayfun E. Tezduyar, Aerospace Engineering and Mechanics
 USDoD, Army
 \$4,923,075 - 01/09/95-01/08/96

Army High-Performance Computing Research Center

Tayfun E. Tezduyar, Aerospace Engineering and Mechanics
 USDoD, Army
 \$1,999,999 - 01/09/95-01/08/96

Program of Support to Agribusiness - Morocco

William Fenster, International Agricultural Programs
 Agency for International Development
 \$2,433,985 - 10/03/94-06/30/98

Molecular Basis for Immune Response to *Cryptosporidium* Infection in Cattle

Mitchell Abrahamsen, Veterinary Pathobiology
 USDA
 \$245,000 - 04/01/95-03/31/98

Anesthetic Reactions in Surgery

Charles F. Louis, Veterinary Pathobiology
 NIH, NIGMS
 \$264,107 - 04/01/95-03/31/96

National Information Sharing Program on Home and Community-Based Services

Robert L. Kane, Institute for Health Services Research
 Rosalie A. Kane, Institute for Health Services Research
 Department of Health and Human Services
 \$307,164 - 02/15/95-02/14/96

Safety and Tolerability of Neoral in Stable Renal Transplant

Daniel M. Canafax, Pharmacy Practice
 Arthur Matas, Surgery
 Sandoz, Inc.
 \$115,315 - 10/01/94-03/31/96

Rapamycin Safety and Pharmaceuticals after a Single Dose IV in Renal Allograft Recipients

Daniel M. Canafax, Pharmacy Practice
 Wyeth-Ayerst Research
 \$185,834 - 11/28/94-12/31/95

Protein Tyrosine Kinases and Electromagnetic Fields

Fatih Uckun, Therapeutic Radiology
 Leslie L. Robison, Pediatrics
 NIH, NIEHS
 \$152,113 - 04/01/95-03/31/96

Role of the Cerebellum in Visually Guided Arm Movement

Timothy Ebner, Neurosurgery
 NIH, NINDS
 \$139,667 - 04/01/95-02/29/96

Nitric Oxide Synthase Gene Expression and Cerebral Ischemic Damage

Costantin Iadecola, Neurology
 Margaret E. Ross, Neurology
 NIH, NINDS
 \$208,506 - 03/20/95-02/29/96

Oxidation and Deformation in Sickle Red Blood Cell Dehydration

Robert P. Hebbel, Medicine
 NIH, NHLBI
 \$221,061 - 04/01/95-02/29/96

Studies of Normal and Neoplastic Prostate

Khalil Ahmed, Laboratory Medicine and Pathology
 NIH, NCI
 \$176,250 - 04/05/95-01/31/96

Physiology of Retinal Muller Cells and Astrocytes

Eric A. Newman, Physiology
 NIH, NEI
 \$250,701 - 04/01/95-03/31/96

Quantification of Biophysics and Viability in Frozen Liver

John C. Bischof, Mechanical Engineering
 Whitaker Foundation
 \$180,000 - 04/01/95-03/31/98

Identification and Characterization of Effluents from Various Cooking Appliances and Processes as Related to Optimum Design of Kitchen Ventilation Systems

Thomas Kuehn, Mechanical Engineering
 James W. Ramsey, Mechanical Engineering
 American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc.
 \$167,378 - 04/01/95-09/30/97

Compiling Self-Similar Programs with Applications to Ocean Circulation Models

Matthew T. O'Keefe, Electrical Engineering
 USDoD, Navy
 \$125,000 - 02/27/95-03/26/96

Geometric Methods for Numerical Computing: Graph Partitioning Mesh Generation and Parallel Computation

Shang-Hua Teng, Computer Science
 National Science Foundation
 \$129,935 - 05/01/95-04/30/98

Fundamentals of Drag Bit-Rock Interaction

Emmanuel Detournay, Civil Engineering
 Andrew Drescher, Civil Engineering
 Gas Research Institute
 \$172,933 - 10/01/94-09/30/96

Ultrafast Near-Field Scanning Optical Microscopy

Paul F. Barbara, Chemistry
 USDoD, Navy
 \$108,000 - 10/01/94-09/30/95

A Femosecond Window on Ultralocalized Aromatics

Paul F. Barbara, Chemistry
 USDoD, Navy
 \$108,000 - 10/01/94-09/30/95

Theoretical and Computational Chemical Dynamics and Energetics

Donald G. Truhlar, Chemistry
 National Science Foundation
 \$162,000 - 05/01/95-04/30/96

An Exploration of the Applicability of Minimum Metabolic Energy Simulations to Understanding Pathological Gait

Lisa M. Schutte, Orthopaedic Surgery
Whitaker Foundation
\$179,148 - 04/01/95-03/31/98

Enzymology of Protein Prenylation Reactions

Mark D. Distefano, Chemistry
American Cancer Society, Inc.
\$200,000 - 01/01/95-12/31/96

Minnesota Space Grant College Consortium

William L. Garrard, Aerospace Engineering and Mechanics
NASA
\$205,000 - 03/01/95-02/28/96

Day Treatment for Adolescents - University Day Community

Michael R. Rothweiler, General College
Hennepin County
\$350,810 - 01/01/95-12/31/95

City Quest

Michael R. Rothweiler, General College
Intermediate School District #287
\$104,434 - 01/01/95-12/31/95

Atrix Laboratories, Inc., Clinical Study ACS-35

Carl L. Bandt, Dentistry
Bruce L. Pihlstrom, Preventive Sciences
Atrix Labs
\$175,000 - 01/06/95-01/31/96

Administration of Somavubove During Consecutive Lactations

Brian Crooker, Animal Science
Donald E. Otterby, Animal Science
Upjohn Company
\$309,684 - 12/01/94-12/31/97

Daily Administration of Somavubove During Consecutive Lactations

Brian Crooker, Animal Science
Donald E. Otterby, Animal Science
Upjohn Company
\$281,412 - 12/01/94-12/31/97

Soybean Breeding and Genetics Support

James H. Orf, Agronomy and Plant Genetics
Minnesota Soybean Research and Promotion Council
\$100,450 - 05/01/95-04/30/96

Lake States Regional Forest Resource Assessment

Henry H. Webster, Natural Resources
USDA, North-Central Forest Experiment Station
\$105,000 - 04/10/95-03/01/96

Vocational Assessment Program

Rene V. Dawis, Psychology
David J. Weiss, Psychology
St of MN, Department of Economic Security
\$148,142 - 01/02/95-09/30/95

Establishment of Genetic System in *Candida albicans*

Paul T. Magee, Genetics and Cell Biology
Stewart Scherer, Microbiology
NIH, NIAID
\$276,306 - 03/01/95-02/28/96

Biodegradable Plastics from Yeast and Plants

Friedrich Srienc, Biological Process Technology Institute
David A. Somers, Agronomy and Plant Genetics
Consortium for Plant Biotechnology Research, Inc.
\$100,000 - 04/01/95-03/31/96

Microbial Physiology and Structure of the Lactose Carrier

Robert Brooker, Biological Process Technology Institute
NIH, NIGMS
\$171,786 - 01/01/95-12/31/95

The Drama of Initiation: Theatre and Masonic Ritual

Lyndel I. King, University Art Museum
Barbara Reid, Theatre Arts and Dance
National Endowment for the Humanities
\$250,000 - 03/01/95-06/30/98

Origin and History of Glacial Deposits in West-Central Minnesota

James F. P. Cotter, Geology, Duluth
National Science Foundation
\$51,367 - 04/01/95-03/31/96

Evaluation of Family Services and Community-Based Collaboratives

Robert H. Bruininks, Educational Psychology
St of MN, Office of Strategic and Long-Range Planning
\$75,000 - 01/05/95-05/31/97

I Come Here to Learn: Recruitment and Retention of Minorities in Science, Engineering and Mathematics

Timothy B. Holst, Science and Engineering, Duluth
NASA
\$99,206 - 03/01/95-02/29/96

Superconducting Interface Structures and Tunneling Junctions

Allen M. Goldman, Physics and Astronomy
National Science Foundation
\$35,000 - 05/01/95-04/30/96

Advanced Manufacturing of Thick Composite Structures

Kumar Tamma, Mechanical Engineering
Battelle, Inc.
\$81,750 - 01/19/95-01/18/96

Improving Soybean Root Health in No-Till Planting Systems

George W. Rehm, Soil Science
Ward Stienstra, Plant Pathology
Minnesota Soybean Research and Promotion Council
\$31,100 - 05/01/95-04/30/96

Politicization of Public Opinion

Lawrence Jacobs, Political Science
Russell Sage Foundation
\$17,065 - 11/01/94-10/31/96

Reducing Colon Tumor Growth and Metastasis by Soy Products

Daniel D. Gallaher, Food Science and Nutrition (CHE)
Minnesota Soybean Research and Promotion Council
\$55,877 - 05/01/95-04/30/96

Growth and Protein Expression of Eukaryotic Cells

Friedrich Srienc, Biological Process Technology Institute
National Science Foundation
\$98,135 - 03/15/95-02/29/96

Providing Affordable Rural Housing

Harrison Fraker, Architecture
McKnight Foundation
\$20,000 - 03/15/95-09/01/95

Analysis of Fiber Supply for the Hibbing Bio-Refinery Facility

John Gephart, Natural Resources Research Institute, Duluth
Arkenol, Inc.
\$22,000 - 03/31/95-05/31/95

Undergraduate Internship Program in High-Performance Computing

Tayfun E. Tezduyar, Aerospace Engineering and Mechanics
Donald G. Truhlar, Chemistry
National Science Foundation
\$44,250 - 02/01/95-07/31/96

ORTTA Telephone Numbers

A Quick Reference Guide

Fax Number	Financial Reporting Fax Number		612/624-4843	612/626-0321
		Name	Number	Internet
Associate Vice President, ORTTA		A.R. (Tony) Potami	624-1648	arpotami@ortta.umn.edu
Assistant Vice President		Marilyn Surbey	624-4850	msurbey@ortta.umn.edu
Administrative Director		Carol Perusse	624-6389	cperusse@ortta.umn.edu
Director of Communications and Marketing		Michael P. Moore	624-9398	mike@ortta.umn.edu
Editor, <i>Research Review</i>		Phil Norcross	625-2354	phil@ortta.umn.edu
Grants and Contracts - Information			624-5599	
Director of Research Administration		Fred Bentley	626-2265	fred@ortta.umn.edu
Assistant Director		Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
DHHS (NIH, etc), US Ed, CDC, FDA, HRSA		Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Local/Private/Corporate Foundations, MN Med, Some DHHS		Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc), US Ed, Business/Industry (HS except Med Sch)		Kevin McKoskey	624-1521	kevin@ortta.umn.edu
Am Cancer, Business/Industry (Med Sch only)		Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
DHHS (NIH, etc)		Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
Voluntary Health/Am Heart/Foundations		Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc), Voluntary Health		Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Account Number Assignment, Documents		Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
Assistant Director		Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St of MN, DOT, VA, Associations/Societies		Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, Ag Associations		Elizabeth Klitzke	626-7718	eklitzke@ortta.umn.edu
USDI (Non-IT), St of MN, DOC Contracts, NIST		Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC		Virginia Olson	624-0288	ginny@ortta.umn.edu
MN Technology, Inc., Business/Industry/3M (All non-HS)		Debra Elvine	624-5571	deb@ortta.umn.edu
St of MN, Cities/Counties/Foreign/Colleges/Universities, AID/USIA/MUCIA		Susan Stensland	625-3515	stensland@ortta.umn.edu
NSF (Non-IT), Sea Grant, ACS/PRF, Misc Federal (DOJ/NOAA/FEMA/HUD, etc)		Tom Eggenberger	626-8265	tom-e@ortta.umn.edu
NSF (IT), MINDOT, EPA		Liz Dawson	624-2521	liz-d@ortta.umn.edu
Patents and Technology Marketing - Information			624-0550	
Director, Technology Licensing (IT, CBS, IAFHE)		Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology Licensing		William Rosenberg	624-9568	bill@ortta.umn.edu
Technology Licensing		Laurel Halfpap	626-9293	laurel-h@ortta.umn.edu
Director, Technology Licensing (Health Sciences)		Jim Severson	624-0262	jim-s@ortta.umn.edu
Technology Licensing		Michael F. Moore	624-9531	michael@ortta.umn.edu
Technology Licensing		Grace Malilay	624-6426	grace@ortta.umn.edu
Assistant Director, Trademark and Software Licensing		Robert Hicks	626-1585	bob@ortta.umn.edu
Technology Transfer Coordinator (Sota Tec Fund)		Erhard Bieber	625-8826	erhard@ortta.umn.edu
Financial Reporting				
Indirect Cost and Other Rate Development		Doyle Smith	626-9741	doyle@ortta.umn.edu
Financial Reporting, Accounting Questions		Sandra Kenyon	624-6026	sandy@ortta.umn.edu
Nonfederal, Foundations, St of MN		Eric Erickson	624-5007	eric@ortta.umn.edu
Industry, NSF, Subcontracts		Randa Adams	624-8053	randa@ortta.umn.edu
NIH, US Ed		Pat Healy	624-7033	pat@ortta.umn.edu
Other Federal		Renee Frey	624-7850	renee@ortta.umn.edu
Effort Reporting		TBA	624-2040	@ortta.umn.edu
Effort Help Line			625-7824	
Information Services				
Assistant Director		Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Application Materials, Program Announcements, SPIN, Gopher		Kim Makowske	624-9004	kim@ortta.umn.edu
IRB: Human Subjects Committee (1300 S. 2nd St., Ste. 10)				
Fax: 612/626-9755		Moira Keane	624-1889	moira@ortta.umn.edu
Duluth, Office of Research and Technology Transfer				
Sr. Grant and Contract Administrator		Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Grants Development Administrator		Jan Bower	218/726-8837	jbower@ub.d.umn.edu
Senior Secretary		Mary Jo Aubin	218/726-7582	maubin@ub.d.umn.edu
Morris				
Grants Development		Tom Mahoney	612/589-6465	mahoneyt@caa.mrs.umn.edu
Support Staff		Rita Bolluyt	1/589-6465	bolluytr@caa.mrs.umn.edu

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