

RESEARCH REVIEW

Office of Research and Technology Transfer

July 1997

Grants Management Project

Electronic Grant System is Up and Running

For the past year, we have provided monthly status reports on the development of the Electronic Grants Management System (EGMS). The official rollout of EGMS Release 1.0 is now here, and we are ready to have UM faculty use this system to prepare their proposals and BA23 forms. In addition, developments to facilitate award set-up and grants management will continue during fiscal 1998.

The capabilities of Release 1.0 of EGMS are described below.

For a new NIH proposal using the standard 398 kit, EGMS assists the principal investigator and her or his staff to do the following:

1. Prepare a line-item budget using the University chart of accounts, which will then flow to the agency forms.
2. Make all necessary calculations for salary, fringe benefits, indirect costs, and inflation.
3. Generate the following completed agency forms:
 - Face Page
 - Budget Pages (detailed first-year, future-years summary, and justifications)
 - Form BB (abstract, performance-site information, and list of key personnel)
 - Table of Contents (including pages for non-University biographical sketches and other support information)
 - Biographical Sketches for UM staff
 - Other Support pages for UM staff
 - Resources page
 - Checklist page
4. Assure compliance with agency and University rules when completing information by applying rules and providing an audit of the proposal before finalization
5. View proposal information and agency forms during the approval process, and print copies as needed.

6. Generate a BA23 populated with proposal information once the proposal has been audited.
7. Electronically route the BA23 within the University for approval, and print copies as needed.

For a new NSF proposal using the 95-27 kit, EGMS enables the principal investigator and her or his staff to do the following:

1. Prepare a line-item budget using the University chart of accounts, which will then flow to the agency forms.
2. Make all necessary calculations for salary, fringe benefits, indirect costs, and inflation.
3. Generate two completed agency forms: the summary budget proposal form and the individual budget-year form.

Electronic BA23:

1. For an NIH proposal developed using EGMS, appropriate data such as title, PI, time periods, and amounts can flow to the BA23 without having to

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Doyle Smith, 612/626-9741, or Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 or leased by the University of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 1

July 1997

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr	+ 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr	+ 8.4%
Summer quarter TA, RA, AF	—	8.4%
Summer session TA, with tuition	\$12.68/hr	+ 8.4%
Summer session TA, without tuition	—	8.4%
Professional program assistant	—	8.4%
Legal project assistant, with tuition	\$11.11/hr	—
Legal project assistant, without tuition	—	—
Dental fellow *	\$3.88/hr	—
Medical fellow *	\$3.19/hr	—

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277..

Rate changes will be reflected in this section.

Index

An index to the *Research Review* for fiscal year 1997 is available and may be requested by contacting Tove Jespersen at 624-0061, tove@ortta.umn.edu. Indices for previous years going back to fiscal year 1989 are also available.

GA Fringe Rates Adjusted for New Tuition Schedule

The fringe benefit rates for graduate assistants and professional student assistants have changed slightly in accord with the new tuition structure that the regents are expected to approve during their July meeting.

The new rates are listed at left. The five changes are as follows:

The standard rate for teaching, research, and administrative assistants decreased 16 cents, to \$6.38 per hour. For TAs, RAs, and AFs with advanced master's or Ph.D. status, the rate decreased 7 cents to \$1.12 per hour. For legal project assistants with tuition benefits, the rate increased 1 cent, to \$11.11 per hour. For dental fellows it decreased 9 cents, to \$3.88 per hour. And for medical fellows, it decreased 8 cents, to \$3.19 per hour.

The new tuition schedule was presented to the Board of Regents at its June meeting, as a part of the University's budget plan for the present fiscal year. The plan specifies

a 2.5 percent increase in tuition for graduate, law, and medical students, and various other increases specific to dentistry, public health, veterinary medicine, architecture and landscape architecture, the Carlson School of Management, and the Humphrey Institute.

In the Graduate School, the increase in tuition rates is accompanied by a widening of the standard tuition "band." Last year, graduate tuition was \$1,560 per quarter for 7 to 12 credits. This year it is \$1,660 for 7 to 14 credits, says the budget plan.

Despite the tuition increase, fringe benefit rates decreased because the previous benefit rates anticipated a larger tuition increase.

The new graduate and professional student assistant fringe benefit rates were published June 16 by George Green, associate dean of the Graduate School.

EGMS

(continued from page 1)

rekey this information. Then the remainder of the BA23 can be completed on the web.

2. "Create a BA23" is a form that can be prepared on the web and routed electronically for approval with the understanding that the form must be printed and sent to ORTTA with the paper copy of the proposal.
3. "Print a BA23" allows people to print a blank form to be completed manually. Users are reminded not to generate copies of this form for future use but to retrieve the most current version for each proposal.

Database Creation—EGMS provides the following:

1. A central database of submitted proposals that is accessible for viewing by authorized University staff.
2. Information to be used in statistical analysis, and which will flow to other systems to facilitate award and account set up.
3. An expertise database separate from EGMS where University of Minnesota staff can keep and maintain data regarding their publications, other support, biographies, and other professional information to be used to prepare proposals and to send to other expertise databases like the Community of Science.

Security:

Through the use of X.500 identifications and passwords, EGMS provides the following:

1. Individual proposal security by allowing PIs to create working groups for a proposal.

2. Expertise database security by limiting write capabilities to individual staff.
3. The routing and electronic signature capability of FormsNirvana.

Budget Tool:

EGMS can help with budget calculations, such as the new graduate student fringe benefit calculations, even if you are not completing an NIH or NSF proposal.

The first user departments—Epidemiology and Surgery, part of the Focused Grants Management Project—are beginning the training and implementation process. This process requires that an area identify an EGMS process manager, who in turn will identify the potential users and facilitate the setup and training. Specific training programs are under development and will be conducted on request. If you want your department or area to be among the first to take advantage of this system, please contact Susan Stensland at stensland@ortta.umn.edu.

Presentations on the capabilities of EGMS can be arranged for departments and faculty groups by contacting Winifred Schumi at 612/624-5750 or wschumi@ortta.umn.edu. Development and refinement of this system will continue during fiscal year 1998.

Access the EGMS system at
<http://egms.ortta.umn.edu>.

Information about this project is available at
<http://www.ortta.umn.edu/e-grants>.

E-mail comments to egms@boombox.micro.umn.edu.

By Win Ann Schumi and Susan Stensland, SPA/ORTTA

Sponsored Projects Administration

Frequently Asked Questions About Sponsored Projects

Question: If the principal investigator is responsible for the financial, as well as technical and scientific, aspects of a sponsored project, why is the award made to the University and not the PI?

Answer: Sponsors make awards to the University and hold the University responsible for all aspects of the project. However, once the award is made, someone must be in charge to conduct the project. Internally, the University holds the PI responsible for the scientific and financial operation. This is because it is the PI's project: the PI conceived the idea, put together the research plan, identified the necessary resources, and developed the budget request. Support is available to assist PIs with financial management, but ultimately it is the PI who decides how funds are used to complete the project.

Most sponsors will not make awards to individuals. Rather they are made to institutions to assure accountability. The institution also provides the necessary infrastructure, space, equipment, and services which are not available to individuals acting alone. Due to this investment in infrastructure, institutions have a large stake in the process, and therefore provide the stability sponsors look for when entrusting their grant dollars.

Question: Why do ORTTA and SPA have guidelines instead of policies?

Answer: University policies and procedures govern all University activity, sponsored and nonsponsored. ORTTA and SPA provide institutional oversight regarding sponsored funds, and sponsors apply terms and conditions to their awards which may be more restrictive or specific than University policies. ORTTA guidelines are designed to provide a bridge between University policies and sponsor terms so that risk to the University can be managed. Failure to follow the guidelines increases risk to the University, and in the worst case could result in disallowance of cost and/or fines and penalties, which would be the responsibility of the department or college.

An example is the "Sponsored Document Routing Matrix." Tapping into the document routing process allows grant administrators the opportunity to pre-audit costs before they are charged to a grant and thereby minimize risk to the University.

Question: When Sponsored Financial Reporting sends out final invoices without written approval from the PI, and there is an error, who is held accountable?

Answer: As a part of closing procedures, SFR works with unit administrators and PIs to ensure that final

billings to sponsoring agencies are accurate. The usual procedure is to send a preliminary copy of the final report to the principal investigators and unit administrators asking for review of the report and stating that if there is no response within a designated period of time, the report will be sent to the sponsor. *Principal investigators, or their designees, are responsible for communicating with SFR if there is an error in the final report.* No response implies approval. Timely submission of final reports is needed to meet agency requirements. Failure to do so jeopardizes both the receipt of the final payment and the possibility of future funding.

Because SFR is a service unit that is responsible for providing financial reports to sponsoring organizations on behalf of principal investigators, SFR will not, in principle, be responsible for inaccuracies on final reports. However, if a significant error occurs in a final report, SFR will review the circumstances on a case-by-case basis.

Question: Does SPA foresee unit administrators setting up their own objects in the future?

Answer: No. The only real tool that exists within CUFS to provide University oversight of sponsor rebudgeting terms is to set up the budget at the time of the award according to the categories in the sponsor-approved budget and then review changes through EB requests and ET documents. Until better tools become available through Forms Nirvana and EGMS, it is unlikely we will see a change. The hassles with object set-ups can be minimized if more attention is paid at the time the budget is developed to the objects that will be needed.

by Todd Morrison, Sponsored Projects Administration, and Joan Donaldson, Sponsored Financial Reporting

Clarification of Fiscal '98 Object Codes:

Last month's chart describing new object codes (*Research Review*, June 1997, p. 3) has apparently caused some confusion. In the right-hand column, the parenthetical statements "all of them indirect costs" and "an indirect cost" were not intended to mean these items are always treated as indirect costs. Rather the expenses identified by the object codes 7310, 7341, and 7350 are normally treated as indirect costs on federal awards, and additional justification is required if they are budgeted as direct costs. Refer to the University policy on *Charging of Direct and Indirect Costs*. Contact your grant administrator if you have questions.

Proposal and Award Data Now Available in the Data Warehouse

The proposal and award data that ORTTA has long supplied to administrators and investigators on paper and in response to individual ad hoc requests is now directly available to users through the data warehouse.

Direct access to the data, via the CUFSRDB database in the University's Data Warehouse (IDEA), should make it easier for users to track proposals and awards. To the proposal and award data previously available via IDEA, ORTTA has made changes and additions that allow users to duplicate the reports ORTTA used to send out on paper, as well as produce customized reports of their own.

The "point and click" interface on the IDEA home page allows users to create simple queries, pull the required data, and convert it to the format most useful to them. Data can also be downloaded to users' individual desktop computers. Once written, queries can be saved for use month after month with little or no modification.

Using CUFSRDB via IDEA, users can pull many combinations of data by investigator, funding agency, or category of agencies, such as private foundations or business and industry.

Using CUFSRDB requires an IDEA identification and password. For questions regarding access, please call the help line at Financial System Support (612/624-1617). For training in the use of CUFSRDB, call Training Services (612/626-1373). And for questions about hardware and software, call Central Computing Operations (612/624-0555).

For help with specific queries, especially with reproducing reports you previously received on paper from ORTTA, please call Mary Bendtsen, 612/624-0583, mbendtsen@ortta.umn.edu.

Effort Certification Clarified

Last month's description of effort certification (*Research Review*, June 1997, p. 1) prompted questions from Joe Konstan, assistant professor of computer science. Thank you Dr. Konstan.

Question: For a person on a 50 percent appointment (such as a 50 percent RA) who spends 30 hours a week working on a sponsored project (for the RA), 20 hours a week on classwork, and 10 hours a week on a professional activity (e.g., volunteering as an officer in a student chapter professional society), it seems like we report 100 percent effort, but by your definitions 50 percent or 60 percent would be more accurate. How is this case handled?

Answer: A 50 percent appointment for a graduate research assistant (GRA) per University policies governing the employment of graduate students cannot exceed 20 hours a week. Appointments greater than 50 percent (greater than 20 hours per week) are subject to Social Security and Medicare taxes. For some students, a research assistantship may provide the basis for part or all of their thesis work. In such cases a portion of the students' research work may be considered part of their academic activity and may be uncompensated. However, in cases where students are not using the research experience as part of their degree programs, appointment percentages and compensation must accurately reflect the appropriate 40-hour work-week portion, i.e. a 50 percent appointment reflects an average commitment of 20 hours of work per week. Therefore I will use 20 hours worked on a sponsored project instead of the 30 hours used in the example above.

Total hours worked in a bona-fide employee-employer relationship, in contrast to hours spent conducting student activities, is the basis for determining effort. Therefore, only 20 hours (a 50 percent appointment) worked as an employee of the University is the basis of the GRA's certification of effort. Classwork and professional activities are personal activities of the GRA as a student. For example, a GRA with a 50 percent appointment spent 5 hours on "Future Cures" and 15 hours on "Survey Results;" GRA's effort on Future Cures would be 25 percent (5 hours/20 hours); and 75 percent on Survey Results (15 hours/20 hours).

For graduate assistants and students with multiple appointments, please note: 100 percent effort for graduate students in a bona fide employee-employer relationship consists of the sum total hours worked of their appointment(s). For example, a 100 percent effort for a graduate assistant who has two 25-percent appointments would consist of the combined two appointments, or a maximum weekly base of 20 hours. Graduate students supported by training grants as "fellows" are not considered employees and therefore their effort is not required to be certified.

Question: How does consulting come into play? I've never seen consulting hours (up to the one day per week allowed) listed on effort certification forms. Are they "overload" hours or should they be considered University or department business?

Answer: Consulting is considered University or department business and thus borne by nonsponsored accounts.

By Doyle Smith, coordinator of effort certification

Animal Research and Ethics Can Coexist

Jeffrey Kahn's address to the annual appreciation luncheon for the animal-care staff

(Kahn directs the University's Center for Bioethics.)

From the rhetoric coming out of the animal rights activist community and the media attention that community attracts, you might think that animal research and ethics cannot coexist, and worse, you might think that the majority shares that view. I feel very strongly that those are misperceptions. In fact, the argument is really not even framed appropriately. Rhetoric would have you believe that research involving animals is unethical. In fact, the mistreatment, abuse, or other inhumane treatment of animals in research is unethical, but that is not how biomedical research operates. No one advocates the inhumane treatment of animals. In fact, biomedical researchers are committed to only their animals' most-humane treatment. As those of you in the research community know, there is absolutely no reason to mistreat or overuse animals, and in fact a very large incentive to treat them well.

Animals are used only to the extent that other models are insufficient, and often on the way to human studies. Only the absolute minimum number of animals necessary to further the research goal are used. The species lowest on the developmental scale that can further the research goal are chosen. To use more and different animals would be wasteful and costly. And animals are cared for in the most humane and careful way because our research in-

vestment is so great. These are all practical reasons to support the humane and therefore ethical treatment of animals in research.

The public appreciates that much knowledge is gained by research involving animals, and supports the continuation of animal research. Just as most members of the public don't align themselves with other activist causes, the majority of Americans don't align themselves with the animal rights movement, either. It is this quiet majority that values and appreciates the work that you [researchers working with animal subjects] do.

But what we need to do is a better job of making the public aware of the commitment of researchers to the humane treatment of animals, and of reminding the public that research involving animals is basic for much of the health and well-being we—as well as the animals we raise and keep—enjoy. We should make very clear that the biomedical research community has reduced the use of animals in areas in which it is not required.

In all, I just want to make the point that research involving animals is appreciated and valued by many more people than might be apparent, and it is a crucial part of the ongoing gains in biomedical research that we all continue to enjoy.

Notice of Grant Award

Beginning in July, you may notice that your Notice of Grant Award (NOGA) looks slightly different. ORTTA is implementing an interim process of creating some NOGAs on a new template. The information will be the same; only the presentation will differ slightly. If you have questions, call Kim Makowske at 624-9004.

Award of Note

Judith Berman, associate professor of plant biology, recently received one of two 1997 Burroughs Wellcome Fund Scholar Awards in Pathogenic Mycology. The award provides \$400,000 over the five years that began July 1.

State Repeals Law Governing ICR Funds

State law no longer requires the University to use ICR money for research and not for teaching or service. That requirement was repealed in the 1997 Minnesota higher education appropriation bill, signed by the governor on May 20.

Funds from indirect-cost recovery—"ICR money"—are funds the University receives from sponsors in order to cover the indirect costs of sponsored projects. How the University spends those funds was previously governed by Minnesota statute 137.41, which read as follows:

"Indirect cost recovery money received by the University of Minnesota must be used exclusively for the direct support of research or the financing of support activities directly contributing to the receipt of indirect cost recovery money. It may be used for debt retirement for research-related buildings. It may not be used for teaching or service."

The higher education appropriation bill reads "Minnesota Statutes 1996, sections 126.113; and 137.41 . . . are repealed" (S.F. 1888, article 3, section 39).

Nakano and Tran Honored for their Service to University Lab Animals

Albert Nakano, a graduate student in cell biology and neuroanatomy, works to educate the public about the role of research animals and to substitute tissue culture techniques for live-animal tests. Hau Tran, a laboratory animal care technician for the University's Research Animal Resources, has been caring for University animals for ten years, and excels at protecting them from pathogens.

Last month, Nakano and Tran were honored with Patrick J. Manning Research Awards, which recognizes "significant contributions to biomedical research and the enhancement of the welfare of animals used in research." The awards were presented May 21 at the annual appreciation luncheon for all the University personnel who care for its animals.

Established by current health sciences staff and funded by private donations, the award is meant to remember and further the work of Professor Manning, who directed Research Animal Resources at the University for twenty years, until his death in 1994.

"Dr. Manning knew what makes people tick and what makes organizations work," Greg Steinhagen told the luncheon crowd: "Resist the quick fix. Stay with a project until it's done. And *recognize the contribution of staff at all levels.*" Steinhagen manages animal care for RAR and chairs the award committee.

Four other animal care staff were nominated for the award this year: Karen Bazille of RAR, Lynn Hartman of the Department of Surgery, Bryan Jones of the Department of Medicine, and Les Westendorp of the College of Veterinary Medicine.

The award includes \$500 cash. Nominations are solicited each January. Steinhagen emphasizes that the award and the luncheon are funded entirely with private donations, no University or state funds.

The award committee particularly cited Nakano's "educating the public about the role of animals in research through his participation in FACTS (Focus on Animals' Contributions to Science) and Brain Awareness Week activities; his extensive use of tissue culture techniques as an alternative to animal use; and his involvement in the public discussion on the use of animals in research, including articles providing a thoughtful and scientific perspective."

For Tran, the committee noted "his dedicated care of many species of research animals at Research Animal Resources over the past ten years; his efforts to learn and then exemplify new skills, including maintenance of animals within a microbiological barrier to minimize introduction of potentially pathogenic microorganisms; and his consistently even demeanor, high motivation, and teamwork in completing his assignments."

Submission Deadlines to ORTTA

An increasing number of urgent applications, budgets, proposals, and other correspondence arrive at ORTTA after business hours on the last possible day before funding agencies' deadlines. It is difficult, to say the least, to provide the proper signatures and other processing for such documents. As a result, the documents risk missing funding agencies' deadlines. To address this problem, ORTTA operates with a 3:00 p.m. deadline.

Proposals, revised budgets, and other urgent correspondence that require ORTTA's endorsement *must* arrive at ORTTA by 3:00 p.m. on the day they are due to leave the University. Documents arriving after that cannot be assured proper, timely submission to funding agencies.

For major proposal deadlines and other extenuating circumstances, please consult the appropriate ORTTA grant administrator if you cannot get documents to ORTTA by 3:00 p.m.

Research Animal Resources

"Rodent Wet Lab"

Hands-on instruction for laboratory manipulation of rodents

July 30, 1:00-3:00 pm

Handling
Restraint
IV tail vein injections
IP injections
Gavaging
Orbital sinus blood collection

Pre-registration is required

Call Research Animal Resources at 624-9100

LCMR Legislative Recommendation Leads to Millions for Research at U

Acting on competitive proposals it received in 1996, the Legislative Commission on Minnesota Resources recommended to the 1997 legislature some \$37 million in spending related to protection of natural resources. The legislature and the governor accepted most of the LCMR's recommendations, including \$6.2 million for 22 sponsored research and service projects to be performed all or in part by the University of Minnesota. Those projects are listed below.

In most cases the law specifically names the University as the recipient of funds for these projects, but in some cases, usually because the work will come to the University as a subcontract from a state agency, the University is not named in the law. *Research Review* relied on Susan Thornton of the LCMR staff to identify the latter cases.

The titles, abstracts, and funding amounts listed below come from the appropriation bill; the investigators' names come from other sources. For more information, call the LCMR at 612/296-2406.

Soudan Underground Physics Laboratory Expansion

To assist in the construction of the Soudan Mine facilities for scientific interpretation; \$400,000

Marvin Marshak, Academic Affairs

Pollution Prevention Training Program for Industrial Employees

To the director of the Office of Environmental Assistance for agreements with Citizens for a Better Environment and the University of Minnesota to provide the training and technical assistance needed for pollution prevention by industrial employees; \$200,000

At the University, the cooperating investigator is Ian Greaves, Environmental and Occupational Health

Biological Control of Agricultural Pests

To accelerate using biological control of pests in agricultural production systems; \$200,000

David W. Ragsdale, Entomology

Crop Management to Minimize Pesticide Inputs

To develop nonpesticide management strategies for pest control for crops; \$300,000

Linda L. Kinkel, Plant Pathology

Sustainable Farming Systems

For a comprehensive program of complementary on-farm and Experiment Station research, demonstration, and educational activities about the economic and environmental effects of sustainable farming systems; \$560,000

Helene Murray, Agronomy and Plant Genetics

Preventing Stormwater Runoff Problems Through Watershed Land Design

To develop watershed-based land design models for preserving habitat and traditional patterns, and preventing flooding and water quality degradation; \$280,000

Robert D. Sykes and Lance Neckar,
Landscape Architecture

Reducing Minnesota River Pollution from Lacustrine Soils

To the commissioner of agriculture in cooperation with the University of Minnesota for the second biennium to research the impact of farming systems utilizing crop residue for sediment control on lacustrine landscapes in the Minnesota River Basin; \$250,000

At the University, the cooperating investigator is John Moncrief, Soil, Water, and Climate

On-Site Sewage Treatment Alternatives and Technology Transfer

To the Pollution Control Agency for the second biennium to evaluate alternative on-site sewage treatment systems for cost-effective removal of pathogenic bacteria, viruses, and nutrients; \$500,000

At the University, the cooperating investigator is Jim Anderson, Soil, Water, and Climate

Atmospheric and Nonpoint Pollution Trends in Minnesota Lakes

To the Pollution Control Agency to document geographic and historic trends in lake eutrophication and inputs of toxic metals and organic pollutants from land-use impacts and atmospheric sources; \$325,000

At the University, the cooperating investigator is Deborah Swackhammer,
Environmental and Occupational Health

Metropolitan Area Groundwater Model

To the Pollution Control Agency for the second biennium to improve and refine the metropolitan groundwater model to improve contaminant tracking, cleanup evaluation, and overall protection of groundwater resources; \$300,000

At the University, the cooperating investigator is Otto Strack, Civil Engineering

Wetland Ecosystems Monitoring

To monitor wetland restorations for their ecological success and develop a long-term monitoring database; \$160,000

Susan Galatowitsch, Horticultural Science and
Landscape Architecture
Joan Nassauer, Landscape Architecture

Sustainable Lake Plans

To the Center for Urban and Regional Affairs, in cooperation with the Minnesota Lakes Association, to develop education programs and a comprehensive lake plan in each of the state's five lake regions; \$270,000

At the University, the cooperating investigator is
George Orning, Center for Urban and Regional Affairs

Peatland Restoration

To the University of Minnesota-Duluth, Natural Resources Research Institute, to promote reestablishment of diverse, sustainable peatland ecosystems on harvested peatland sites through accelerated development of cost effective, reliable peatland restoration techniques; \$275,000

Kurt W. Johnson and Thomas Malterer,
Natural Resources Research Institute, Duluth

Restoring White Pine in the Minnesota Landscape

To investigate factors currently limiting establishment of white pine seedlings in various forest cover types. Management recommendations for natural regeneration, seeding, and planting must be developed; \$120,000

Klaus J. Puettmann, Forest Resources

Electronic Environmental Education Raptor Network

To the Raptor Center for the second biennium to implement an electronic environmental education network using satellite tracking with birds of prey. The raptor center must seek additional public and private partnerships; \$222,000

Patrick T. Redig, Small Animal Clinical Science
Mark Martell, Raptor Center

Alfalfa Biomass Production

For the evaluation of the environmental impacts and benefits of the production of alfalfa for electrical power generation; \$200,000

John Moncrief, Soil, Water, and Climate

Loons: Indicators of Mercury in the Environment

To analyze loon exposure to mercury and its effects on loon health and reproduction in the wild; \$230,000

Francesca J. Cuthbert, Fisheries and Wildlife
David Evers, Ecology, Evolution, and Behavior

Improved Decisions for Walleye Stocking and Special Regulations

To evaluate outcomes of various stocking and harvest strategies through modeling and genetic marker tracking of the best performing strains to maximize benefits of walleye stocking and harvest regulations on individual lakes; \$245,000

Ira R. Adelman and Anne R. Kapuscinski,
Fisheries and Wildlife

Minnesota Rare Mussel Conservation

To establish and monitor refugia in the St. Croix River to improve freshwater mussel conservation; \$91,000

Anne R. Kapuscinski and Mark C. Hove,
Fisheries and Wildlife

Minnesota's Forest Bird Diversity Initiative

To the commissioner of natural resources for the fourth biennium of a six-biennium project for a comprehensive monitoring and research program that develops management tools to maintain forest bird diversity; \$350,000

At the University, the cooperating investigator is
Gerald Niemi, Natural Resources Research Institute

Training and Research Vessel for Lake Superior

To the University of Minnesota-Duluth to purchase a vessel for training and research on Lake Superior; this appropriation must be matched by at least \$250,000 of nonstate money; \$250,000

Thomas C. Johnson, Large Lakes Observatory, Duluth

Arboretum Land Acquisition

For a grant to the University of Minnesota Landscape Arboretum Foundation for the second biennium for land acquisition to expand the boundary of the Minnesota Landscape Arboretum. This appropriation must be matched by at least \$450,000 of nonstate money; \$450,000

Peter J. Olin and John R. Tester, Sr.,
Horticultural Science

Ten Grants Awarded for New Initiatives in Interdisciplinary Research and Postbaccalaureate Education

The Office of the Vice President for Research and Dean of the Graduate School is pleased to announce that ten proposals submitted to the Interdisciplinary Research and Postbaccalaureate Education Program have been awarded grants beginning July 1, 1997.

Vice President Mark Brenner invited applications that 1) involve faculty drawn from two or more disciplines typically spanning two or more colleges, 2) are in disciplines in which the University has significant faculty strength, 3) focus on issues of state or national significance or on areas in which Minnesota could create a special niche, 4) hold important opportunities for the education and training of graduate students, and 5) are likely to draw external funding within two years. Proposals in fields without significant external funding opportunities are also considered for this program, provided a strong rationale for the importance of a problem is given and unique or outstanding faculty strengths to address it are identified. Proposals that were highly ranked by the faculty peer review committee were then sent to all deans of participating faculty for assessment in terms of collegiate goals, new hiring, etc., so that any new initiatives receiving support would have a high likelihood of a "soft landing" in two years when support from the Office of the Vice President for Research ends.

Ten of the 25 proposals submitted in January have been selected for up to three years of funding: one for support of planning efforts (up to \$20,000 total); seven for support of new programmatic center activities (up to \$100,000 total); and two previously funded centers for an additional one or two years of support. These grants will support interdisciplinary projects in 13 colleges. The next call for proposals will be this fall for funding in 1998-99.

Faculty who are considering applying to this program in the coming year are strongly encouraged to contact Professor Charles F. Louis, assistant vice president for research and associate dean of the Graduate School, at 612/625-2356 or facgrant@tc.umn.edu. Guidelines and application forms are available on the Web (at <http://www.research.umn.edu/research/fundsrc.html>).

Structural Biology and Molecular Biophysics Program

\$100,000 over three years; CBS, IT, Dentistry, Medical School, Pharmacy

For more information, contact Professor Leonard Banaszak, 626-6597, len_b@dccc.med.umn.edu

An informal Structural Biology and Molecular Biophysics (SBMB) program at the University has evolved over the last two decades. Its faculty and instrumentation resources are highly rated nationally. As the biological sciences move into the next century, there will be a growing need for structural and biophysical data. To make the physical resources attached to the SBMB group widely available, it is proposed to formalize a Structural Biology and Molecular Biophysics Program. With funds to support new collaborations, feasibility studies, and training, the existing biophysical equipment and faculty expertise will be made available to a wide range of faculty. Such funds will be used to pay for the training expenses and reagent charges for students or faculty with no immediate external support but with a suitable and sound research project. The core SBMB faculty will serve as a source of intellectual aid or collaborative effort in the preparation of grant requests to continue such studies. The program will also focus on the development of an accredited seminar course in structural biology and molecular biophysics, which will be based on an informal journal club in existence for seven years and attended by students and faculty from multiple departments. In preparation for the changeover to the semester system, formal lectures in structural biology and molecular biophysics will be incorporated into the new curriculum either through existing courses or through the formulation of a new course. For those in biology who are not familiar with the analysis and use of biomacromolecular structure, the availability of training and experience in structural biology and molecular biophysics will add significant breadth to their preparation for a variety of research endeavors. In terms of graduate education, the result will be scientists prepared for high-level positions in the biological sciences.

Center for Integrated Natural Resources and Agricultural Management

\$100,000 over two years; COAFES, Natural Resources

For more information, contact Jan Joannides, 624-4299, joann001@tc.umn.edu

A joint venture between the College of Agricultural, Food, and Environmental Sciences and the College of Natural Resources, the Center for Integrated Natural Resources and Agricultural Management (CINRAM) was formed to overcome the limitations of current disciplines and institutions in addressing holistically the management of Minnesota lands. Today's land-use problems are

Graduate School News

the result of complex biological, economic, and social factors not effectively addressed by single disciplines. CINRAM is a crucially important means for bridging gaps between disciplines and organizations, and ensures the University will be an active partner in these collaborative, interdisciplinary efforts. CINRAM catalyzes the development and large-scale adoption of integrated land-use systems to 1) help attain a more diverse and resilient agricultural and natural resource production base, 2) increase landowner profitability, 3) enhance the environment, and 4) strengthen rural communities. CINRAM works to ensure that these land-use systems are based on sound science and supported by ready access to needed information.

Center for Hardwood Ecology

\$100,000 over three years; CBS, Natural Resources

For more information, contact Lee Frelich, Ph.D., 624-3671, freli001@tc.umn.edu

The Center for Hardwood Ecology will be a cooperative unit between the College of Natural Resources and the College of Biological Sciences. Hardwood forests dominated by maple and oak were an important and widespread native ecosystem that attracted settlement and development in Minnesota and elsewhere in the region. As of 1995 less than 0.2 percent of the original hardwood forests in the Upper Midwest have never been logged. The current old-growth remnants are small and isolated. Major problems such as fragmentation, fire suppression, increased browsing by deer, potential climate change, and invasion by exotic species threaten the existence of these rare ecosystems and limit the potential for their renewed regeneration and restoration in the region. The ways that cutover stands have regenerated vary depending on the history of management. The Center for Hardwood Ecology will bring together an interdisciplinary group of ecologists to study ecological processes at the physiological, community, and landscape levels and to enrich the research training of graduate students. This work will provide scientific leadership, and the center will work to apply such findings to management initiatives in the region. Studies will address major problems related to conservation and/or restoration of hardwood forests, while advancing basic understanding of ecosystem function and its relationship to the maintenance of biological diversity.

Center for the Study of Neurobehavioral Development in the Context of Adversity

\$100,000 over three years; EdHD, Medical School

For more information, contact Professor Megan Gunnar, 624-2846, gunnar@vx.cis.umn.edu

Neural plasticity is now a well-accepted, well-researched phenomenon. Many aspects of brain development depend on or are influenced by pre- and postnatal events. Some types of events are necessary for normal neural development; others, in particular adverse events that activate stress physiology, may be deleterious. Although well-accepted, nearly all the work on neural plasticity has been conducted in animals. The goal of the center is to organize and coordinate the efforts of researchers across collegiate units to document the impact of adversity on brain and behavioral development in children. The center will conduct a proseminar for faculty and students, organize an offering of the Minnesota Symposium on Child Psychology around adversity and brain development, conduct pilot studies, and submit a proposal for a program project grant to the National Institutes of Health in 1999, followed, if successful, by a center grant proposal.

Center for the Study of Political Psychology

\$50,000/one year; CLA, CSOM, EdHD, Law

For more information, contact Professor John Sullivan, 624-4305, jsull@polisci.umn.edu

The field of political psychology is growing rapidly both nationally and internationally. The University is well-suited to become a major center for this interdisciplinary field because of its strengths in graduate education and the breadth and quality of the faculty members involved in political psychological research. University of Minnesota faculty are already leaders in several research topics within the field, including diversity and tolerance, social cognition, and political participation. Building on these strengths, the Center for the Study of Political Psychology (CSPP) focuses on creating and supporting interdisciplinary research groups and enhancing graduate education through symposia and cooperation with the Ph.D. minor in political psychology and through outreach activities. CSPP's research groups serve as a bridge among researchers from several departments and have succeeded in attracting external and internal support for interdisciplinary research. These research teams have enhanced graduate education through direct involvement by graduate students and through presentations of ongoing research. CSPP plans to continue to create and support new research groups and to continue projects such as the Minnesota Symposia in Political Psychology. It also edits *The Political Psychologist* (the newsletter of the American Political Science Association's political psychology section) and *Political Psychology* (the top journal in the field).

Graduate School News

Center for Biodegradation Research and Informatics

\$100,000 over two years; CBS, IT, COAFES, Medical School

For more information, contact Professor Lawrence Wackett, 625-3785, wackett@biosci.cbs.umn.edu

As the late Regents' Professor Stanley Dagley (Biochemistry-CBS) once remarked, "I've been studying biodegradation all my life; now, I'm relevant." Professor Dagley was acknowledging that the esoteric study of how microbes recycle organic matter had come of age as the underpinnings of *bioremediation*, a burgeoning billion-dollar industry. The University's tradition of research in this area has continued. In 1996 a group of University faculty initiated plans for the Center for Biodegradation Research and Informatics (CBRI). Since then, the expanded faculty group has proposed to focus CBRI intensively toward industrial interactions, with the ultimate goal of becoming externally funded based on a University-industry partnership. It is planned to enhance existing interactions with various companies. In addition, CBRI is developing Internet-delivered courses for the industrial outreach education market. The efforts of CBRI will continue to be coordinated with the Biological Process Technology Institute, the Center for Microbial Physiology, and the aims of biology reorganization at the University, which includes the need for defining the research foci and campus affiliation for a large number of biology faculty.

Minnesota Youth Drug Abuse Research Center

\$89,000 over two years; CLA, EdHD, Medical School

For more information, contact Professor Ken Winters, 626-2879, winte001@tc.umn.edu

The central aim of the Minnesota Youth Drug Abuse Research Center (MYDARC) is to enhance understanding of the etiology, course, and clinical heterogeneity of youth drug abuse through both cross-sectional and longitudinal investigations. MYDARC will focus particularly on the role of attention deficits as a mediator and moderator of youth drug abuse. Roughly a third to a half of drug-abusing youths suffer from serious attention problems and are likely to experience more severe negative consequences and be more resistant to treatment than adolescent drug abusers without serious attention problems. Yet the specific role of attention problems in the pathogenesis of adolescent drug abuse, and their impact on the long-term outcomes of drug-abusing youths, has not been studied systematically. MYDARC builds on the strengths of its core faculty as substance abuse researchers, an experi-

enced and prominent group of scientists, all of whom have achieved considerable success in obtaining federal funds in the study of substance abuse and youth. MYDARC start-up funds from the University will provide programmatic support for the preparation of a proposal to seek funding from the National Institutes of Health to establish within two years a national research center on youth drug abuse and attention problems. The national center would conduct state-of-the-art investigations into the origins, mediators, correlates, and impacts of this youth problem. An additional use of start-up funds would be to design and implement a community outreach and education program.

Candida albicans Research Center

\$20,000 over two years; CBS, Medical School

For more information, contact Professor P.T. Magee 624-7280, magee@mailbox.mail.umn.edu

The planning grant for a *Candida albicans* Research Center is intended to support the infrastructure of a very productive group of investigators who intend to submit a proposal in the 1999 competition for the National Institute of Allergy and Infectious Disease Program Project Grants for Mycological Research Units. This proposal includes five faculty who work either on *Candida albicans* or on projects whose approach and techniques could profitably be brought to bear on questions relating to this significant human pathogen. These faculty represent four departments: two in basic science, one clinical, and one which has aspects of both. The infrastructure will be supported in the following ways: A series of retreats involving the laboratories of the PI and co-PIs will be held. Seminar speakers both knowledgeable in the field of medical mycology and acquainted with the needs of mycology research units (including the directors of two of the present units) will be invited. Three individuals will be sent to a new course on molecular (medical) mycology to be given at Woods Hole Oceanographic Institution. Finally, the five co-PIs will meet on a bi-monthly basis to prepare the proposal for 1999.

[Please see the next Research Review for description of the two remaining grants: *Interdisciplinary Investigation of Transboundary Water Policy Issues Related to the Great Lakes Basin*, led by Sandra Archibald; and *Interdisciplinary Center for Development of Microsensor Technology in Genetic Testing*, led by George Barany.]

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

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phil@ortta.umn.edu.**

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For Your Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

To receive other application materials and guidelines, please contact the respective agencies directly. Web sites and/or addresses are listed at the end of each article. On some stated occasions, information may be obtained from ORTTA.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu; <http://www.research.umn.edu/research.html>.

■ National Center for Responsible Gaming

The National Center for Responsible Gaming was established in 1996 to encourage and support new research on problem and pathological gambling. Major questions remain unanswered about the nature of gambling-related disorders, the efficacy of current treatment and prevention programs, the relation of problem gambling to other addictive disorders, and the role of the brain's neurochemistry. The research should improve understanding of the etiological factors related to problem gambling, improve diagnostic methods, and identify empirically valid prevention and treatment programs. Eligible disciplines include neuroscience, the social sciences, and epidemiology.

The center has designated funding priorities for this award cycle and is interested in research proposals that primarily consider the role that cognitive, personality, emotional, and psychosocial processes play in the etiology, onset, and maintenance of gambling disorders. In addition, the center is willing to consider research proposals that may not fit the current program emphasis as long as the research furthers the goal of enhancing current prevention and treatment strategies.

A mandatory letter of intent is required by **July 15, 1997**, which briefly describes the project and which includes, if possible, names of possible reviewers. Full proposals are due **September 2, 1997**. For further information contact Christine Reilly, executive director, National Center for Responsible Gaming, 540 Pierce Avenue, Kansas City, MO 64110; 816/531-1878, creilly182@aol.com. There are no application forms. Proposal guidelines are available from the agency or from ORTTA. Call ORTTA at 624-7021.

■ Department of Defense Research Equipment

The Defense Department is inviting proposals to increase university research related to national defense by supporting purchase of costly research equipment. Funds are to be used to acquire major equipment to augment current or develop new research capabilities to support research in the technical areas of interest to sponsoring agencies.

Health and life science areas range from chemical and biological sciences in the Army Research Office, to cognitive and neural sciences and biological and biomedical sciences in the Office of Naval Research, to chemistry and life sciences, chronobiology and bioenvironmental sciences at the Air Force Office of Research.

\$45 million will be available for FY98 and \$44 million for FY99 awards. Instrumentation must be in the \$50,000 to \$1 million range.

Eligible applicants are institutions of higher education with degree-granting programs in science, math, or engineering. Proposals should address the impact of the equipment on the institution's ability to educate students through research in disciplines important to DoD missions.

The application deadline is **August 22, 1997**. For further information contact Major Linda Steel-Goodwin, AFOSR/NI, 110 Duncan Avenue, Room B115, Bolling Air Force Base, Washington, DC 20332-8050; 202/767-8069. The full solicitation is available at <http://web.fie.com/htdoc/fed/afr/afo/edu/text/any/afrdurip.htm>. The announcement number of AFOSR BAA-97-3.

■ Environmental Protection Agency Lead Poisoning Prevention and Lead Hazard Awareness Public Education and Outreach Grants

The Environmental Protection Agency (EPA) is soliciting pre-application grant proposals under a new grant program for Lead Poisoning Prevention and Lead Hazard Awareness Public Education and Outreach. The purpose is to deliver public education and outreach products and service to increase lead-based paint hazard awareness and promote lead poisoning prevention to high-risk target audiences. Examples of projects include, but are not limited to:

- Training members of the medical profession who work in a particular community in lead-based paint hazard awareness and poisoning prevention.

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- Increasing lead hazard awareness by distributing pamphlets and brochures at community meeting places, schools, and local events, and conducting follow-up seminars or information fairs.
- Developing and delivering lead poisoning prevention awareness programs for workers living in high-risk target communities who may bring lead back into their homes.
- Creating a new information product, distributing it in a specified locale, and demonstrating that the product effectively communicates the lead hazard awareness messages.

It is anticipated that \$450,000 will be available to award grants in the range of \$20,000 to \$60,000.

Pre-applications are due by **July 28, 1997**, and should consist of a work plan and a budget. The work plan should be no more than 10 pages, and the only appendices should be resumes of key personnel and copies of outreach materials appropriate to the application. The budget should include personnel, fringe benefits, travel, equipment, supplies, contractual, construction, other, total direct charges, indirect charges, and total. Travel includes funds to go to Washington, D.C., or Atlanta for an information-sharing meeting of all successful grantees.

For further information contact Susan B. Hazen, director, Environmental Assistance Division (7408) Office of Pollution Prevention and Toxics, Room E-543B, Environmental Protection Agency, 401 M Street SW, Washington, DC 20460; 202/554-1404, TSCA-Hotline@epamail.epa.gov. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu.

■ Environmental Protection Agency Sustainable Development Challenge Grant

The Environmental Protection Agency (EPA) is soliciting proposals for the FY97 Sustainable Development Challenge Grant (SDCG) program. Proposals are encouraged that place an emphasis on city/metropolitan-related projects because approximately 80 percent of the U.S. population lives in metropolitan areas, where the goals of a healthy environment compete with economic development, affordable housing, public safety, and mobility for attention from both government and the private sector. EPA's program to protect the health of Americans by protecting their communities' air, water, and land must acknowledge this reality. EPA intends these grants to be

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catalysts that challenge communities to invest in a more sustainable future, recognizing that sustainable environmental quality, economic prosperity, and community well-being are inextricably linked.

The SDCG program provides an opportunity to develop place-based approaches to problem solving related to current patterns of urban growth and public investment/disinvestment, patterns that accelerate loss of open space and wetlands, and increased consumption of fossil fuels for energy and transportation.

The program strongly encourages partnering among community, business, and government entities to work cooperatively. Applicants may compete for funding in two ranges 1) \$50,000 or less, and 2) between \$50,001 and \$250,000. Proposals will compete with other proposals in the same range. Matching is required at 20 percent.

Proposals must be postmarked by **August 15, 1997**. Application kits and project descriptions of previous awards are available from <http://www.epa.gov/ecocommunity> and kits only by fax at 202/260-2555 or voice mail at 202/260-6812. For further information contact Pamela A. Hurt, U.S. EPA, Office of Air and Radiation (MC 6101), 401 M Street SW, Washington, DC 20460.

■ National Endowment for the Arts Cultural Star Cities Program

The National Endowment for the Arts is requesting proposals leading to the award of a cooperative agreement for the development and the strategy for implementing a business plan to create a "Cultural Star Cities Program" (working title only) in the United States, similar to the European City of Culture Program.

The work will include 1) researching the effectiveness and value of the European Cultural Capital Program, 2) researching comparable award programs both in the United States and elsewhere, 3) identifying potential partners, and 4) preparing a plan to implement the program in the United States. The plan would include administration, costs, and incentives.

The application deadline is **August 15, 1997**. Interested applicants should reference program solicitation PS 97-02 in their *written* request and include two self-addressed labels. Verbal requests for the solicitation will not be honored. Write to National Endowment for the Arts, Grants & Contracts Office, Room 618, 1100 Pennsylvania Avenue NW, Washington, DC 20506. For other information contact William I. Hummel, same address, 202/682-5482.

Leukemia Society of America Research Funding Opportunities

The Leukemia Society of America provides support for individuals pursuing careers in basic, clinical, or translational research. To advance the understanding, treatment, and prevention of leukemia, lymphoma, Hodgkin's Disease, and myeloma, three levels of support are provided as described below:

Scholar. Scholars are individuals who have demonstrated, over a period of not less than five years, their ability to conduct original research. They should hold an independent faculty-level or equivalent position and have obtained substantial support for their research from a national agency. The award is not intended for support of well-established or tenured senior investigators. Scholarships are \$54,000 a year for five years.

Special Fellow. Special Fellows have completed at least two years of postdoctoral training at the time of review. Fellowships are \$36,700 a year for three years.

Fellow. Fellows are promising investigators about to embark on their postdoctoral research training or who have less than two years experience at the time of review. Fellowships are \$30,250 a year for three years.

Preliminary proposals are due **September 15, 1997**, with full proposals due **October 1, 1997**. For further information contact the Director of Research Administration, Leukemia Society of America, 600 Third Avenue, New York, NY 10016; 212/450-8843, fax 212/681-3643, e-mail lermandB@leukemia.org. Application forms and instructions are available at <http://www.leukemia.org>.

Department of Justice National Survey of Indigent Defense Systems

The Department of Justice announces a public solicitation for multistage sample design, survey development, data collection, data verification, coding and entry, and delivery for a national survey of legal defense for indigents.

The study will develop, test, and implement a national-level data collection program to measure the way in which states and localities provide legal services for indigent criminal defendants, their caseloads, related costs, and policies and practices. The nationally representative sample of indigent-defense providers will also be

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surveyed on types of offenses represented, expenditures, funding sources, and related administrative issues. This project will provide a machine-readable, public-use dataset which will be able to produce a comprehensive portrait of state and local efforts to meet the needs of indigent criminal defendants and their interaction with the other components of the criminal justice system.

Assistance will be made under a cooperative agreement. The total amount to be awarded is approximately \$850,000 over two years. Both profit and nonprofit organizations are eligible to apply.

The application deadline is **August 1, 1997**. For further information contact Steven K. Smith, chief, Law Enforcement, Adjudication and Federal Statistics, Bureau of Justice Statistics, 633 Indiana Avenue NW, Washington, DC 20531; 202/633-3046. Application forms may be requested from Getha Hilario, 202/633-3031. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu.

University of Minnesota Center for Interdisciplinary Studies of Writing

The Center for Interdisciplinary Studies of Writing is offering individual and departmental grants with the ultimate goal of improving departmental curriculum.

Individual grants tend to fall into one of four categories: 1) grants that examine the kinds of writing students use after graduation; 2) projects that look at the status of writing in a department's curriculum; 3) research into the status of undergraduate writing in a department; and 4) explorations into ways writing can improve learning. These individual grants can lay the groundwork for a department-wide grant that addresses the writing needs of the field, of professors, and of students. Departmental grants may investigate ways to incorporate writing into courses as a tool for learning, i.e., journals, in-class writing assignments, and lab papers. A second approach emphasizes writing as a tool to communicate knowledge learned in the field, i.e., formal reports or service-learning writing projects.

Grants for up to \$5,000 are available for individuals and/or collaborative teams. Applicants should submit one-page preproposals outlining the study area, method, and application.

Grants for up to \$10,000 are available for departmental grants. Proposals must display both a research focus and a practical commitment to long-term curricular reforms that include writing. Applicants should submit three-page pre-

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proposals describing the research project and including an informal budget.

After reviewing preproposals, center staff will contact the finalists and will work with them to develop a full proposal. Center staff can also provide ongoing support to grant recipients, including consultation on research design and development, and workshops for faculty and assistants on such issues as assessing writing, collaborative writing, writing assignment development, "writing-to-learn," and the writing process.

Proposals are reviewed on a continuing basis. Preproposals should be mailed to the center at 227 Lind Hall, 207 Church Street SE, Minneapolis, MN 55455; 612/626-7579, fax 612/626-7580.

■ Department of Education Safe and Drug-Free Schools and Communities

Applications are invited for three direct grant competitions supported by the Safe and Drug-Free Schools and Communities Act National Programs. The purposes are to 1) demonstrate effective new methods of ensuring safe and drug-free schools, colleges, and communities, and 2) provide models or proven-effective practices that will help schools and communities to improve their programs funded under the state grants portion of the award.

The three competitions are:

84.184F: Replication of Effective Programs or Strategies to Prevent Youth Drug Use, Violent Behavior, or Both. Up to 6 awards ranging from \$250,000 to \$450,000 will be made for up to 36 months.

84.184G: State and Local Educational Agency Drug and Violence Prevention Data Collection. Up to 10 awards will be made ranging from \$400,000 to \$600,000 for up to 24 months.

84.184H: Prevention Programs in Higher Education: Validation Competition. 5 awards ranging from \$150,000 to \$300,000 will be made for up to 28 months.

Eligible applicants for 184F and 184G are state and local educational agencies, institutions of higher education, other nonprofit agencies, organizations, and institutions; and any combination thereof. Eligible applicants for 184H are institutions of higher education, or consortia thereof.

The application deadline for all three programs is **August 1, 1997**. For applications or information contact Safe and Drug-Free Schools Program, 600 Independence Avenue SW, Suite 604 Portals, Washington, DC 20202-6123; 202/260-3954, fax 202/260-7767, bryan_williams@ed.gov; or <http://gcs.ed.gov>.

■ National Human Genome Research Institute Low-Cost, High-Accuracy DNA Sequencing Technologies RFA: HG-97-002

The National Human Genome Research Institute is requesting proposals for low-cost, high-accuracy DNA sequencing technologies. The purpose is to stimulate research on next-generation technologies that have the potential to reduce the cost of high-accuracy genomic DNA sequencing by at least an order of magnitude.

As a result of recent improvements in sequencing technology and strategies, confidence is high that current technology, enhanced by foreseeable improvements, will be sufficient to complete a reference human genomic DNA sequence by the target date, 2005. However, even with anticipated improvements, DNA sequencing is likely to remain too expensive to meet the scientific demand for sequence information. DNA sequencing of any magnitude can only be contemplated when sequencing techniques have been made considerably more cost-effective and robust than they are today, or will be in the foreseeable future. The purpose of this RFA is to stimulate the development of the technologies needed.

It is anticipated that approximately \$5 million will be available. The number of grants awarded may be as few as five or as many as twenty, depending on the quality and scope of the applications received. Any applicant planning to submit an application for more than \$500,000 direct cost in any one year *must* contact NHGRI staff first.

An optional, nonbinding letter of intent is requested by **August 1, 1997**. The letter should include a descriptive title of the proposed research, the name, address and telephone number of the principal investigator, the identities of other key personnel and participating institutions, and the number and title of the RFA.

The application deadline for full proposals is **October 16, 1997**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. Programmatic inquiries may be directed to Jeffery A. Schloss, Division of Extramural Research, National Human Genome Research Institute, Building 38A, Room 614, Bethesda, MD 20892-6050; 301/496-7531, fax 301/480-2770, jeff_schloss@nih.gov.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	330	\$ 83,704,027
Awards Processed		
May 1997	279	21,263,099
Proposals Submitted		
July 1996 - May 1997	3,529	599,106,209
Awards Processed		
July 1996 - May 1997	2,669	297,986,147
Proposals Submitted		
July 1995 - May 1996	3,811	579,794,095
Awards Processed		
July 1995 - May 1996	2,963	327,958,601

Polymerase Chain Reaction for Early Detection and Enhanced Diagnosis of Porcine Mycoplasmal Pneumonia

Michael P. Murtaugh, Veterinary Pathobiology
 Vivek Kapur, Veterinary Pathobiology
 Minnesota Pork Producers Association
 \$15,000 - 04/01/97-04/30/98

Determination of Compounds Responsible for Boar Taint

Jin L. Xue, Clinical and Population Sciences
 G. D. Dial, Clinical and Population Sciences
 Minnesota Pork Producers Association
 \$15,000 - 05/01/97-04/30/98

Effect of Nursery Partition Design on Disease in Weaned Pigs

Carlos Pijoan, Clinical and Population Sciences
 Mon Torremorrell, Clinical and Population Sciences
 Minnesota Pork Producers Association
 \$15,000 - 05/01/97-04/30/98

Evaluation of Control Protocols for Mycoplasmas Infection

Han S. Joo, Clinical and Population Sciences
 Minnesota Pork Producers Association
 \$15,000 - 05/01/97-04/30/98

Primary Care Workforce Assessment Contract

John Kralewski, Health Services Research
 St. of Minn., Department of Health
 \$50,000 - 12/11/96-06/30/97

Proximity to Waste Sites and B-Cell Lymphoproliferative Diseases

Jack S. Mandel, Environmental and Occupational Health
 NIH, NCI
 \$8,041 - 03/25/97-06/30/97

Toxaphene Analyses in Fish

Deborah L. Swackhamer, Environmental and Occupational Health
 St. of Minn., Department of Natural Resources
 \$5,000 - 04/15/97-06/30/97

Xenotransplantation

R. M. Bolman, Surgery
 Agustin P. Dalmasso, Laboratory Medicine and Pathology
 Christopher Salerno, Surgery
 Alexion Pharmaceuticals Inc.
 \$364,432 - 02/15/97-02/15/98

Safety, Tolerability and Efficacy of Optimark

Charles Truwit, Radiology
 John Kucharczyk, Radiology
 Kent Remley, Radiology
 Mallinckrodt Inc.
 \$185,020 - 11/01/96-10/31/97

Aging, Neurogenetics, and Electrophysiology in Alzheimer Transgenic Mice

Karen Hsiao, Neurology
 Mayo Clinic
 \$300,000 - 01/01/97-12/31/97

Role of Cyclooxygenase 2 Gene Expression in Ischemic Brain Damage

Constantin Iadecola, Neurology
 Margaret E. Ross, Neurology
 NIH, NINDS
 \$180,780 - 03/01/97-02/28/98

Study of Intravenous Immunoglobulin in Generalized Myasthenia Gravis

John Day, Neurology
 Gareth Parry, Neurology
 Centeon
 \$36,000 - 05/01/97-04/30/00

A Randomized Double-Blind, Parallel Group Evaluation of Drugs for Patients with Hypercholesterolemia

Donald B. Hunninghake, Pharmacology
 Nina M. Diangelis, Medicine
 Arthur S. Leon, Public Health
 Bayer Corp.
 \$162,165 - 08/01/96-12/31/98

Bone Marrow Transplant as Treatment for Autoimmunity

Patricia E. Tam, Medicine
 Lupus Foundation of America,
 \$3,600 - 06/02/97-09/05/97

Structural and Functional Characterization of Metalloprotein

Duanqing Pei, Pharmacology
 Elsa Pardee Foundation
 \$128,471 - 06/01/97-05/31/99

Calcium-Dependent Glutamate Transporters in Mammalian Brain

Robert J. Roon, Biochemistry, Medical School
 Minnesota Medical Foundation
 \$9,500 - 05/01/97-04/30/98

In Vivo Studies of Saliva Antimicrobial Proteins

Joel Rudney, Oral Sciences
 NIH, NIDR
 \$176,062 - 04/01/97-03/31/98

Interactive Materials and Devices for Medical and Biological Engineering

Matthew V. Tirrell, Chemical Engineering and Materials Science
 Whitaker Foundation
 \$1,000,000 - 10/01/96-09/30/99

Ethylene from Ethane at Millisecond Times

Lanny D. Schmidt, Chemical Engineering and Materials Science
 Dow Chemical Co.
 \$100,000 - 05/29/97-05/28/98

Hydraulic Modeling and Testing

Richard L. Voigt, Jr., St. Anthony Falls Laboratory
 Scott Morgan, St. Anthony Falls Laboratory
 Metropolitan Council of the Twin Cities
 \$283,020 - 04/16/97-08/31/98

Evaluation of Biodiesel Fuel and Catalyst in an Underground Mine

David B. Kittelson, Mechanical Engineering
Robert W. Waytulonis, Mechanical Engineering
Winthrop F. Watts, Mechanical Engineering

Camiro Mining
\$90,000 - 05/01/97-02/28/98

English as a Second Language Teaching Module for Internet Distribution

Matthew T. O'Keefe, Electrical Engineering
Elaine Tarone, Institute of Linguistics and Asian and Slavic Languages and Literatures

Master Communications Group, Inc.
\$78,006 - 02/01/97-04/01/98

Framework-Based Software Development: Issues, Techniques and Processes

Wei-Tek Tsai, Computer Science

Miscellaneous Agency
\$67,000 - 04/01/97-03/10/98

Effectiveness of Horizontal Reinforcement in Partially Gouted Masonry Sheet Walls

Arturo E. Schultz, Civil Engineering

DoC, NIST
\$28,796 - 09/01/96-03/31/97

Catalytic and Radiant Properties of Porous Structures

Lanny D. Schmidt, Chemical Engineering and Materials Science
S. S. Energy Environmental International, Inc.
\$130,000 - 03/01/97-02/28/00

A New Class of Probes of the Physics of Extragalactic Radio Sources

Thomas W. Jones, Astronomy
Lawrence Rudnick, Astronomy

National Science Foundation
\$90,000 - 05/01/97-04/30/98

Studies of Reservoir Stimulations, Drilling Transportation, Emulsion Stability and Foaming Bubble Reactor

Daniel D. Joseph, Aerospace Engineering and Mechanics
Gordon S. Beavers, Aerospace Engineering and Mechanics

National Science Foundation
\$321,084 - 05/01/97-04/30/00

Domestic Assault Victims Participation in the Prosecution of the Assailants

Patricia A. Frazier, Psychology

Society for the Psychological Study of Social Issues
\$2,000 - 01/01/97-12/31/97

Economic Internationalization, Institutional Change and Democracy in the New Europe

John R. Freeman, Political Science
Morris Kleiner, Hunphrey Institute of Public Affairs

University of Vienna Center for International and Interdisciplinary Studies
\$198,558 - 06/01/97-03/21/00

Electronic Networks: Enhancing Civic Life or Diverting Scarce Resources

John L. Sullivan, Political Science
Eugene Borgida, Psychology

National Science Foundation
\$100,358 - 04/15/97-09/30/98

Summer Interns to Study Biodiversity and Ecosystem Functioning at Cedar Creek Natural History Area

G. David Tilman, Ecology, Evolution and Behavior

Andrew Mellon Foundation
\$55,000 - 05/01/97-04/30/00

Executive Sessions - Sentencing and Corrections

Michael Tonry, Law School

National Institute of Justice
\$498,812 - 10/01/96-09/30/98

Northern Cornbelt Sand Plains Management Systems Evaluation Area

James L. Anderson, Soil, Water, and Climate
John A. Lamb, Northwest Agricultural Experiment Station, Crookston
USDA-Cooperative State Research Service
\$200,000 - 08/15/94-08/31/98

Low-Cost Remediation of Pesticide Spills

Paul R. Bloom, Soil, Water, and Climate
Bruce Cook, Soil, Water, and Climate

Western Minnesota Sustainable Farming
\$30,000 - 03/01/97-02/28/99

Production & Phosphorus Characteristics of Low Phytate Corn

Michael A. Schmitt, Soil, Water, and Climate
Gyles Randall, Southern Agricultural Experiment Station, Waseca

Minnesota Pork Producers Association
\$10,305 - 05/01/97-04/30/98

Production of Female-Sterile Cultivars of Woody Plant Species

Alan G. Smith, Horticultural Science
Harold Pellett, Horticultural Science

American Association of Nurserymen-Horticultural Research Institute
\$10,000 - 01/01/97-12/31/97

Characterization of Antimicrobials from Pozol Isolates

Larry L. McKay, Food Science and Nutrition, COAFES
Dan O'Sullivan, Food Science and Nutrition, COAFES

Quest International
\$210,000 - 04/01/97-03/31/00

Effect of Insemination on Uterine Inflammation

Kevin Rozeboom, Animal Science
Bo G. Crabo, Animal Science
Mats Troedsson, Clinical and Population Sciences

Minnesota Pork Producers Association
\$15,000 - 05/01/97-04/30/98

Experiential Learning Activities for Education in Sustainable Agricultural Systems

Craig C. Sheaffer, Agronomy and Plant Genetics
Steve R. Simmons, Agronomy and Plant Genetics
Mary Brakke, Agronomy and Plant Genetics

University of Nebraska
\$122,732 - 09/15/96-08/31/98

Value-Added Marketing: Financial Planning

Richard O. Hawkins, Applied Economics
Kevin Klair, Applied Economics

Agricultural Utilization Research Institute
\$75,000 - 04/07/97-12/31/98

Spatial Data Delivery Tools

Thomas E. Burk, Forest Resources

St. of Minn., Department of Natural Resources
\$25,000 - 05/15/97-06/30/97

Ecologically-Based Forest Management on Private Lands

Melvin J. Baughman, Forest Resources

U.S. Department of Agriculture
\$5,000 - 10/01/96-09/30/97

Great Lakes Colonial Waterbird Survey

Francesca J. Cuthbert, Fisheries and Wildlife

USDI, Geological Survey
\$75,000 - 05/09/97-12/31/99

Balanced Approach/Restorative Justice Project

Mark Umbreit, Social Work

Florida Atlantic University
\$89,193 - 09/01/96-08/31/97

National Center for Research in Vocational Education

Charles R. Hopkins, Work, Community and Family Education

University of California, Berkeley
\$130,000 - 01/01/97-12/31/97

Salivary Control: Attention Regulation/Inhibitory Control
Megan Gunnar, Child Development
NIH, NIMH
\$51,753 - 06/01/97-05/31/98

State Plan for Commission on National and Community Service
Janet M. Hively, Education and Human Development
Robert H. Bruininks, executive vice president and provost
St. of Minn., Department of Children, Families, and Learning
\$5,000 - 04/09/97-12/31/97

Investigation of Biological Control Potential of *Hirsutiella rhossiliensis* on the Soybean Cyst Nematode
Senyu Chen, Southern Agricultural Experiment Station, Waseca
Minnesota Soybean Research and Promotion Council
\$56,135 - 04/01/97-04/30/98

Sugarbeet Disease Control and Precision Nitrogen Management
Carol E. Windels, Plant Pathology
Larry J. Smith, Northwest Agricultural Experiment Station, Crookston
Sugarbeet Research and Educational Board of Minnesota
\$116,969 - 04/01/97-03/31/98

Operating Grant to KUMD
Paul Schmitz, University Media Resources
St. of Minn., Department of Administration
\$29,090 - 07/01/96-06/30/97

Formula Funds Program
Dale Schatzlein, Continuing Education and Extension
Minnesota State Arts Board
\$60,650 - 07/01/96-06/30/97

Neuroendocrine Regulation of Sexual Receptivity
Leslie Meek, Psychology, Morris
National Science Foundation
\$18,000 - 09/01/96-02/28/98

Optimization of Northwest Airlines Food Service Requirements
Peh Ng, Mathematics, Morris
Northwest Airlines, Inc.
\$6,600 - 07/01/96-10/30/96

Origin and History of Glacial Deposits in West-Central Minnesota
James F. P. Cotter, Geology, Morris
National Science Foundation
\$51,404 - 04/01/97-03/31/98

Responsibility Matters and Winnie the Pooh
Ishtiyaqu Haji, Philosophy, Morris
Tap Payne, Theatre Arts, Morris
U.S. West Foundation
\$4,000 - 02/04/97-06/30/97

Text Access for Visually Impaired and Learning Disabled
Ferolyn Angell, Academic Services, Morris
Nancy South, Academic Services, Morris
St. of Minn., STAR Program
\$13,161 - 01/28/97-09/30/97

A.R.T. (Art Reach Tweed)
Alison Aune-Hinkel, Tweed Museum of Art, Duluth
Minnesota Humanities Commission
\$3,000 - 03/05/97-07/15/97

Mannheimer Piano Festival
Patricia Laliberte, Music, Duluth
Arrowhead Regional Arts Council
\$2,411 - 05/01/97-08/15/97

Minnesota Hybrid Poplar Research Program
William Berguson, Natural Resources Research Institute, Duluth
Agricultural Utilization Research Institute
\$209,811 - 01/30/97-06/30/97

Control of Productivity and Plant Species Segregation by Nitrogen Fluxes to Wetland Beaver Meadows
Carol A. Johnston, Natural Resources Research Institute, Duluth
John Pastor, Natural Resources Research Institute, Duluth
Howard Mooers, Geology and Geophysics
National Science Foundation
\$200,000 - 03/01/97-02/28/98

Wildlife Species: Response to Forest Harvesting
Joann M. Hanowski, Academic Administration, Duluth
Gerald Niemi, Natural Resources Research Institute, Duluth
Francesca J. Cuthbert, Fisheries and Wildlife
St. of Minn., Department of Natural Resources
\$92,500 - 01/14/97-06/30/98

Forest Products Technology Advancement
Thys B. Johnson, Natural Resources Research Institute, Duluth
Christian F. Edwardson, Natural Resources Research Institute, Duluth
U.S. Department of Agriculture
\$218,116 - 03/01/97-02/28/01

Membrane Press Technology
Brian K. Brashaw, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$51,000 - 07/01/96-12/31/97

Clay Body Formulation and Testing Program
Lawrence M. Zanko, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$36,000 - 07/01/96-12/31/97

Soybean Stalk Particleboard for Phoenix Biocomposites
Christian F. Edwardson, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$34,000 - 07/01/96-12/31/97

Forest Productivity and Assessment of Opportunities for the Future
William Berguson, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$25,000 - 07/01/96-12/31/97

Transportation Cost Evaluation of Southwestern Minnesota
Lawrence M. Zanko, Natural Resources Research Institute, Duluth
St. of Minn., Department of Natural Resources
\$4,365 - 03/03/97-06/30/97

Zinc Exploration Program
Mark Severson, Natural Resources Research Institute, Duluth
Steven A. Hauck, Natural Resources Research Institute, Duluth
John J. Heine, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$4,000 - 07/01/96-12/31/97

Technical and Consulting Services for Minnesota Technology, Inc.
Michael Lalich, Natural Resources Research Institute, Duluth
Minnesota Technology, Inc.
\$97,000 - 07/01/96-12/31/97

Minority Initiative: K-12 Teachers and High School Students
Gerald L. Hill, Medicine, Duluth
NIH, DRR
\$44,374 - 04/20/97-02/28/98

Study of Dynamic Changes in Wild Rice Flower Development for Seed Production
Qinqin Liu, Biology, Duluth
Minnesota Cultivated Wild Rice Council
\$4,000 - 04/15/97-03/31/98

National Health and Nutrition Examination Survey IV
Eugene S. Ley, Education and Human Service Professions, Duluth
Westat
\$98,887 - 09/16/96-09/15/06

Fax number
 ORTTA's Web site

612/624-4843
<http://www.ortta.umn.edu>

	<u>name</u>	<u>number</u>	<u>e-mail</u>
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
USDI (non-IT), St. of Minn., DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	Ed Welsch	624-5571	edward@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
	Chris Wees	624-2521	chris-w@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed., MnDOT	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	Andy Swope	625-1359	andy@ortta.umn.edu
NSF (non-IT)	Tracy McClun	626-8254	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort			
Indirect cost and other rate development, and effort reporting	Doyle Smith	626-9741	doyle@ortta.umn.edu
Effort help line		625-7824	doyle@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development			
Administrative director	Tom Mahoney	320/589-6465	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
		related numbers	
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list.

It is generated by the Staff Demographics office.

For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

For changes regarding other labels, please complete the following:

Change **Name:** _____
Add **Department:** _____
Delete **Building & Room No.:** _____
City, State, Zip (if off campus): _____

Please enclose the mailing label!

Please mail this page to:

Tove Jespersen
Research Review
1100 Washington Ave. S., suite 201
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RESEARCH REVIEW

Office of Research and Technology Transfer

August 1997

New Misconduct Policy on its Way to U. Senate

Last March 14 the Board of Regents added to its academic misconduct policy so that an allegation of misconduct can, under some circumstances, lead the University to protect federal funds and notify federal agencies before the allegation is formally investigated.

The change was made in response to demands from the federal Office of Research Integrity (ORI), and made with the understanding that faculty governance would soon propose a completely revised policy.

The broader revision now under consideration retains most of the March additions, but more specifically defines and limits the actions the University is allowed to take. It also more explicitly defines academic misconduct, and it redistributes responsibility for carrying out the regents' policy.

The ORI, part of the Department of Health and Human Services, had been demanding changes for months because it wanted clearer statement of the University's responsibilities under federal law, but the faculty union election prevented discussion of the matter, vice president for research and dean of the Graduate School Mark Brenner explained to the Faculty Consultative Committee in early March. By March, the change was urgent, he explained, and there was not time for proper faculty consultation.

The FCC exercised "emergency powers" and recommended the policy changes to the regents. Shortly afterward, Brenner explained the urgency to the Senate committees on research and faculty affairs, and also explained that the emergency action would soon be undone by a complete revision of the policy subject to thorough Senate consultation. Those two committees have since reviewed and approved the proposed new policy. Brenner and assistant vice president for research Frances Lawrenz expect the full Senate to take up the matter in the fall.

Because the proposed policy deletes, adds to, and extensively rearranges the existing policy, it takes some study to distinguish new language from mere rearrangement of existing language. So this issue of *Research Review* describes the

proposal chiefly by presenting the new passages. Complete text of the proposal is available from Lawrenz at 612/625-2809 or Frances.P.Lawrenz-1@tc.umn.edu. For text of the present policy, including the language added last March, see <http://www.ortta.umn.edu/policy/respolcy.htm#Regents>.

Policy is the Regents'; Procedure is the President's and Senate's

First, the proposed revision separates policy, which the regents would determine, from procedure, which the president would determine with the Senate's approval. Hence there are actually two proposed policies—a regents' policy and a University policy.

The three-page regents' policy defines misconduct and states that the University expects integrity and encourages whistle-blowing, that the Science and Scholarly Advisory Board will provide advice, and that responses to allegations will be fair and confidential. Response to an allegation will proceed "with all deliberate speed" through a process of initial inquiry, followed, if warranted, by investigation, finding, and "appropriate charge or personnel action."

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Doyle Smith, 612/626-9741, or Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 or leased by the University of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 2

August 1997

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Index

An index to the *Research Review* for fiscal year 1997 is available and may be requested by contacting Tove Jespersen at 624-0061, tove@ortta.umn.edu. Indices for previous years going back to fiscal year 1989 are also available.

Final '97-'98 Fringe Rates Have New Details, Same Totals

In June, associate vice president Richard Pfitzenreuter announced final fringe benefit rates for the current year. The rate totals are the same as the preliminary numbers published earlier. Two details have changed: The rate for academic retirement increases 0.3 percent, and the rate for academic social security decreases 0.3 percent. Direct questions to Robin Dittmann in the budget office, 612/626-9277.

Fringe Benefit Details

1997-98, final

	Civil Service	Academic
Retirement	4.2	13.6
Group life & disability	—	0.5
Workers compensation	1.9	—
Unemployment	0.4	—
Social security	6.2	5.2
Medicare	1.5	1.5
Tuition	0.8	0.2
<u>Health insurance</u>	<u>13.2</u>	<u>6.1</u>
Totals	28.2	27.1

1998-99, projected

Retirement	4.3	13.6
Group life & disability	—	0.5
Workers compensation	2.0	—
Unemployment	—	—
Social security	6.2	5.3
Medicare	1.5	1.5
Tuition	0.8	0.1
<u>Health insurance</u>	<u>13.8</u>	<u>6.7</u>
Totals	28.6	27.7

Source: UM Office of Budget and Finance, 28 May 1997

Sponsored Projects Administration Frequently Asked Questions About Sponsored Projects

Question: Why should all requests for administrative changes, e.g. rebudgeting, change of PI, workscope changes, etc., go through ORTTA/SPA for signature?

Answer: There are two reasons. First, the award is made to the University, not the PI. When the PI determines there is need for a change requiring sponsor approval (things that need sponsor approval are noted on the Notice of Grant Award (NOGA)) and makes a request, the sponsor looks for evidence that the PI wants the change and that the University stands behind the request. Second, ORTTA/SPA has been assigned oversight responsibility to review expense and rebudgeting documents. Since most requests affect financial activity, if SPA staff is not aware of planned changes, purchase orders or payment vouchers may be needlessly delayed.

Question: Who should the PI address these requests to?

Answer: Address requests to the grants management official (or similarly titled business official) with a copy identified for the program official. All federal and formal granting agencies separate administrative and technical responsibilities. Grants management officials are generally the only individuals authorized to approve changes. Program or project officers generally provide guidance to grants management officials on the scientific/technical effects of the change.

The principal investigator is often more familiar with his/her program officer and is inclined to address requests to that individual. In practice, however, this simple misdirection creates problems within the agency (as recently brought to our attention by NIH) resulting in delays in response. If the agency doesn't have separate officials for each function, or if you have questions, contact the SPA grant administrator listed on the NOGA.

by Todd Morrison, SPA

Please Send ORTTA the *Department* Copy of a POT

Departmental purchase order forms (generally known as "POTs") come in two kinds—the vendor's copy and the department's copy. The department copy is the one that ORTTA needs. Please make sure it is marked "department copy."

In the old days, when POTs were self-carbon forms, it was obvious which copy was which. Now most of the forms get printed on plain paper, and there's no telling, unless the user labels them. Please write "department copy" across the bottom margin.

Thank you.

Seven UM Faculty are on AAAS Ballot

Seven faculty members of the University are on the ballot in the September election of officers for the American Association for the Advancement of Science, according to the June 27 issue of *Science*.

Sally Gregory Kohlstedt is on the slate for the AAAS Board of Directors. Robert D. Gehrz and Alan E. Shapiro are nominated to serve as chairs-elect of the astronomy section and the history and philosophy of science section, respectively. Mark C. Herzberg, Richard J. Goldstein, and Apostolos P. Georgopoulos are nominated to serve the electorate nominating committees for dentistry, engineering, and neuroscience, respectively. And Thomas A. Louis is nominated to serve as member-at-large of the section committee in statistics.

For more information about the election, see <http://www.aaas.org/communications/inside24.htm>

Research Animal Resources

Laboratory Animal Training and Education

It is incumbent upon every individual involved with the care, use, or handling of animals at the University to treat those animals humanely and appropriately.

The University of Minnesota Animal Care and Use Manual, available from the Institutional Animal Care and Use Committee (612/626-5654) and on the Research Animal Resources (RAR) web site (www.ahc.umn.edu/rar) is a good orientation to general principles and policies of animal use at the University. You may need additional training on special techniques, animal models, anatomy, etc.

The RAR professional staff is available for lectures, demonstrations, consultations, etc. on a wide variety of laboratory animal topics, by calling 612/624-9100. RAR can arrange to give a seminar which will culminate in formal certification for the care and use of research animals. Monthly seminars on a variety of topics are given and are supplemented with periodic wet-labs.

Specific training modules on working with nonhuman primates and with specific pathogen-free rodents are given by RAR and are required before these animals may be handled. To arrange for one of these training modules, the RAR veterinary technician supervisor should be contacted at 612/624-3166.

In addition, videotapes on restraint, handling, blood collection, injections, etc. of rats, mice, rabbits, hamsters, and guinea pigs are available for viewing at RAR, or in three libraries: Biomedical (Diehl Hall), St. Paul Central, and Veterinary Medicine. RAR has a library of texts and videotapes on a variety of related topics. Also in the RAR collection are videotapes useful for discussions of the animal welfare movement and the benefits of animal research.

by Cynthia Gillett, director, RAR

EGMS

EGMS Is A Hit

The response from University staff to last month's article on EGMS has been very positive and exciting. Many principal investigators and administrators have logged onto the system and called us wanting to know how to start using it, how to get their departments set up, what they can use if their department isn't quite ready, etc. The following information should answer some of those questions.

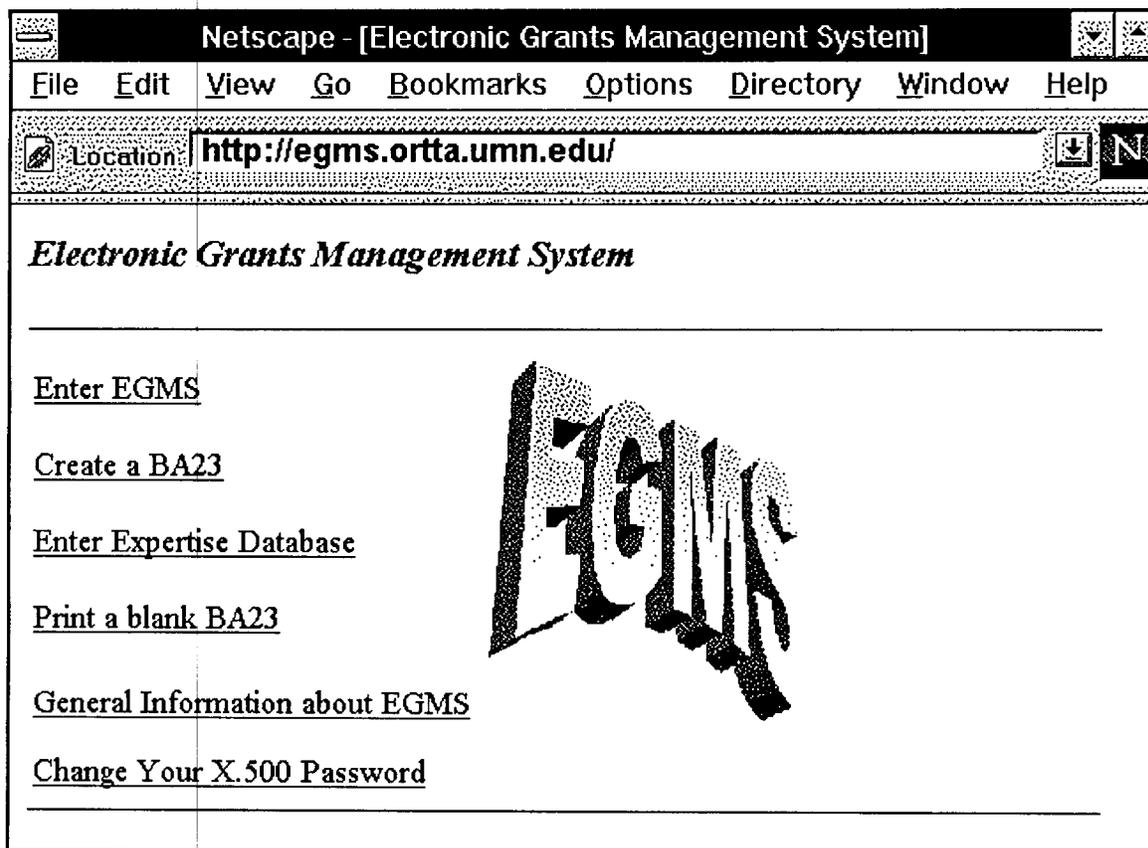
1. All University staff and students are assigned an x.500 username when they start at the University. Your x.500 username and password are the e-mail username and password assigned to you on the University's maroon or gold mail servers. They are *not* necessarily the same as your e-mail username and password on a departmental server. Look up your username in the student/staff directory at web site <http://umn.edu/lookup>. If you can't remember your password, call 612/626-4276 to have a new one set up.
2. Your x.500 ID allows you access to most parts of EGMS. The illustration below shows the choices

available. "Create a BA23," however, requires some additional set up at the department level to facilitate the electronic routing and approval of the BA23 form. This part of EGMS is linked to Forms Nirvana. Departments interested in setting up an electronic process should contact Susan Stensland at stensland@ortta.umn.edu. The project team is also considering the possibility of creating and printing a BA23 form on the Web without invoking the electronic routing and approval process.

3. "General Information about EGMS" has been added to give some helpful hints on how to use the system.
4. EGMS does not require that the PI be the only one to complete all parts of a proposal. User groups can be set up that allow the required staff access and rights to a proposal. One person can do the entire proposal or several may work on it concurrently.

We appreciate the comments and suggestions we are getting from everyone. Please keep them coming. We are continuing to enhance and further develop EGMS.

by Susan Stensland, EGMS



Effort Reporting and Cost Sharing

Cost sharing is a major topic for both the federal government and universities. Recently it has caused quite a stir within universities and medical centers across the nation. The *Wall Street Journal* reported that New York University Medical Center settled with the federal government out of court for \$15.5 million, in part due to the misrepresentation of faculty services donated to sponsored projects and paid for by the NYU Medical Center. It is therefore worthwhile to understand the impact of cost sharing, its relation to effort certification, and the need for departments to account for it.

What Exactly is Cost Sharing?

Cost sharing can be defined as costs incurred and assignable to a sponsored project, but typically paid for by the University. These incurred costs exceed what the sponsor agreed to reimburse. The concept is to collect all costs directly incurred on behalf of a sponsored project, identify and account for the funding source(s), and charge accordingly. For example, the total labor cost incurred to perform research activities on Project Future Cures amounted to \$100,000. The awarding agency is funding \$75,000 and the project has been charged accordingly. The remaining funding source is the University department and \$25,000 has been charged to a nonsponsored account. The University has contributed or *cost shared* 25 percent of the costs on Project Future Cures; \$75,000 of expenditures accumulated in the sponsored account called Future Cures, and \$25,000 accumulated in a nonsponsored account that has been identified to Future Cures.

The most significant cost is labor in the form of contributed effort; however, cost sharing can consist of equipment, supplies, applicable indirect costs, and/or the indirect cost not reimbursed due to an indirect cost rate less than the University's fully negotiated rate. This article covers only the labor component of cost sharing, which should be reflected on employees' certified effort statements.

There are two components of cost sharing: mandatory and voluntary.

Mandatory cost sharing means a sponsor requires the institution to pay a portion of the total project cost. This mandate is a condition of the sponsor's program and applies to all universities that submit proposals. For example, the federal government often issues requests for proposals/applications which require the applicant to show a minimum contribution to the cost of the project, usually specified as a percentage in order to be considered for funding. If awarded, the applicant must make its contribution in order for the sponsor to pay its share.

Voluntary cost sharing means funding from another source (usually department funds) when it is not required

by the sponsor as part of the proposal. However, once costs are incurred, they must be identified and accounted for by the University.

At the time of proposal, for competitive reasons, principal investigators, with the approval of their department heads, may "volunteer" or "commit" costs such as labor to be spent on a project without asking for reimbursement from the sponsor. If a proposal is accepted which includes volunteered cost sharing, it becomes an obligation. For this reason, the University normally discourages indicating voluntary cost sharing in proposals.

Voluntary cost sharing also occurs when a sponsored project exceeds the planned budget and the University provides additional funds, in the form of effort, exceeding its original commitment.

Once an award is made, the University is expected to contribute the mandatory and committed cost sharing identified in the award. In addition, the University is obligated to report all cost sharing and attribute it to a sponsor's project. While faculty may view their time in fulfilling their academic, research, and public service requirements as a continuum of effort, the University is obligated to report the total costs incurred on behalf of a sponsored project. Therefore it is important for faculty who are engaged in sponsored activity to account for and document their effort regardless of whether the sponsored activity is paid for by the sponsor or the University.

Sponsors must be satisfied that institutions are meeting the required cost sharing to their awards. Additionally, the federal government must be satisfied that the University is including the appropriate cost sharing amounts attributable to the research activity in the negotiation of the indirect cost rate for the University. If the cost sharing amounts are not correctly reported, the expenses will not reflect the total cost to conduct research at the University (both sponsored and nonsponsored). The rate at which the sponsors reimburse the institution for indirect costs will be incorrect, which places the University at great risk, as discovered by NYU Medical Center. If viewed by the federal government as intentional misrepresentation of costs for reimbursement, the University could be subject to penalties and damages under the "False Claims Act."

Therefore employees, particularly principal investigators, should report as effort the *actual percentage of their time* that they expend on sponsored projects when certifying their effort statements, even if those projects are not funding that time (i.e., the time is paid for by general department budgets).

After determining the effort expended on various projects and activities, the principal investigator, with the assis-

tance of the unit administrator, is responsible for determining the funding components of the effort. For example, the grant Future Cures will fund 25 percent of Dr. Cost Share's time. The project was established and charged 25 percent of Dr. Share's salary based on the grant's effort budget. The steps to appropriately certify his effort are as follows:

Dr. Share must

1. Determine how much of his time was actually devoted to the project. Let's assume for example, he devoted 50 percent of his time.
2. Determine how much of his effort should be charged to the project (i.e. how much the sponsor will pay based on the effort expended) and how much must be absorbed by the department (cost shared). Since the sponsor will only reimburse for 25 percent, the remaining 25 percent of Dr. Share's effort must be recorded as cost sharing.
3. Make the necessary changes to the statement, initial the changes, and sign the effort statement in accordance with having direct knowledge of the work expended.

Faculty with Nine-Month Appointments

Faculty having nine-month appointments who are fully funded during the summer on sponsored activity should note the following example for recording effort with respect to cost sharing:

Dr. Share has an NSF grant that pays 100 percent of his effort during two summers. During those summers, he has no obligation to the University for "campus citizenship," such as committee work; any such work is on his own personal time. And during those summers, any extra time he gives the NSF project is not cost-shared by the University but is considered 100 percent of his time. The NSF grant does not fund Dr. Share during the academic year; nonetheless he gives the NSF project 25 percent of his effort during the academic year.

Effort certification for the summers reflects 100 percent activity devoted to the grant and charged to the grant. Cost sharing is zero. During the academic year, Dr. Share's certified effort statement for each quarter reports the following:

	<u>% Payroll</u>	<u>% Cost Sharing</u>	<u>% Effort</u>
Nonsponsored account	100	(25)	75
NSF grant	0	25	25
Total	100	0	100

NIH Salary Cap

The National Institutes of Health (NIH) will reimburse salaries up to \$125,000 annually per individual, and it

administers that salary cap as a monthly maximum rate of \$10,416. For employees paid above that rate, the difference between actual salary and the cap must be cost-shared by the University.

For example, a researcher paid \$12,500 per month devotes 50 percent of his effort to an NIH project. NIH can be charged, at most, \$5,208 for a half-time salary (\$10,416 x 50%). So effort on the NIH project is 50 percent; the effort charged to the NIH payroll is 42 percent (\$5,208 / \$12,500); and the effort cost-shared by a nonsponsored account is 8 percent.

	<u>% Payroll</u>	<u>% Cost Sharing</u>	<u>% Effort</u>
Nonsponsored account	58	(8)	50
NIH grant	42	8	50
Total	100	0	100

Care should be taken to correctly record effort for those whose salaries exceed \$125,000 on NIH awards. If effort was certified without reflecting cost sharing, the project was probably charged based on the effort expended; however, the required cost sharing was not considered. The mistake adds to department expenditures unnecessarily and exposes the University to further risk with NIH.

As a management tool, the Office of Research and Technology Transfer Administration (ORTTA) distributes along with the quarterly effort statements the *Quarterly Effort Certification Payroll Report* which identifies those individuals who may exceed the salary cap. This report should aid unit administrators to ensure that payroll charged to NIH awards reflect the adjusted amounts in accordance with the salary cap. In addition, the unit administrator should send a memo to ORTTA's Effort Unit requesting that subsequent effort statements report the appropriate amount for cost sharing. For what the request should include, see the next paragraph.

ORTTA's Assistance in Identifying and Reporting Cost Sharing

To assist departments in identifying and reporting cost sharing, ORTTA, relying on the budgets provided by principal investigators, lists the names of individuals and their cost sharing percentages on the Notice of Grant Award (NOGA). This information is loaded by ORTTA into the cost sharing database and is included on the pre-printed effort statements distributed quarterly to the departments. It is the responsibility of departments to verify actual effort and cost sharing when certifying effort. Departments may request ORTTA to update the cost sharing database to reflect appropriate amounts to be reported on subsequent effort statements. Submit the request to the Effort Unit, and include the following:

Individual's name

(continued on page 15)

Graduate School News

The University of Minnesota: A Tribute to Learning

May 1997 Graduate School Commencement Address

by Former President Nils Hasselmo

Born in 1931 in Köla, Sweden, Nils Hasselmo began his undergraduate studies in Scandinavian languages and literature at Uppsala University. He received the Mauritzon Fellowship for study at Augustana College in Rock Island, Illinois, a college founded in 1860 by Swedish immigrants, where he received his B.A. in 1957. After returning to Uppsala to begin graduate work, he received a fellowship from Harvard University, where he completed his Ph.D. in linguistics in 1961.

After teaching at Augustana College and the University of Wisconsin, Dr. Hasselmo in 1965 joined the Department of Scandinavian Languages and Literatures at the University of Minnesota. His scholarly work has focused on the study of bilingualism and language contact, including a book on the modified native dialects of Swedish Americans (1974).

During 18 years at Minnesota, Dr. Hasselmo served as chair of the Scandinavian department, associate dean of the College of Liberal Arts, and vice president for administration and planning. As vice president, he had administrative responsibility for the University's academic planning, as well as intercollegiate athletics and personnel.

In 1983 Dr. Hasselmo left Minnesota to serve as senior vice president for academic affairs and provost at the University of Arizona. He returned to the University of Minnesota as its 13th president in December 1988.

Among President Hasselmo's many accomplishments was his 1990 "Initiative for Excellence in Undergraduate Education," which promoted smaller classes, improved teaching and advising, residential college programs, facilities renovation, and a new liberal education curriculum; in 1993 he presented his strategic plan, "University 2000: The University of Minnesota for the 21st Century."

This commencement address is one of the last public speeches given by Dr. Hasselmo as president of the University of Minnesota, a position he relinquished on July 1 to return, after a one-year leave, to what is now the Department of German, Scandinavian, and Dutch.

This morning [May 16, 1997], I am proud to say, busloads of University of Minnesota students, staff members, and faculty members left for Crookston—volun-

teers to help the Red River Valley community clean up and recover from this spring's extraordinarily damaging flood.

A few weeks ago I sat in my office in 202 Morrill Hall at this university. The meeting I had just attended ended early, and I was in a contemplative mood—a rare luxury. I faced the looming necessity to move out my things, to deal with memorabilia that caused the good kind of flood, the flood of memories of eight and a half years of service as president and of longer memories that shaped and guided those years.

I was sitting at my desk, a solid piece made out of white birch by my grandfather. I was sitting in my desk chair, which has armrests with carved lion heads, also made by my grandfather.

On the desk in front of me was a picture of my grandfather. He had left the farm at the age of sixteen and moved into a town in southern Sweden. He had a sixth-grade education and little or no hope of acquiring more education. He worked hard; he had skillful hands and could turn wood into beautiful pieces of furniture. When I started spending my summers at his house in the 1930s, he had built a shop employing half a dozen people. I still remember my wonder as a little boy when I saw the rough planks at one end of the building being turned into the beautiful pieces of furniture that came out at the other end of the building.

My father is also in the picture. He looks amazingly young, but at that time he did not have a 65-year-old son. He looks a little tired, but no wonder. He also had received a sixth-grade education and at first worked as a gardener's apprentice. I never remember encountering a tree, bush, or flower in my childhood the name of which my father did not know, in Swedish and in Latin. But at the age of eighteen he decided he was going to get an education.

No wonder he looked a little tired. He had to attend special courses to qualify for entrance into a teachers college. He lived on the pittance he could earn during the summer in my grandfather's carpentry shop and on the small amount his parents could send him from time to time. And, by the time the picture was taken, he did have me on his hands!

He got his degree, including both a teaching certificate and a certificate as an organist in the Swedish state

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church. I remember him at the desk where I was now sitting in my office at the University of Minnesota. It was at that desk that he became a learned man and an author. It was at that desk that for a lifetime he kept the flame of learning burning. My father had taken that important leap into educational opportunity, hard as it was for him to reach.

I am also in the picture, a five-year-old Swedish tow-head. I have that expectant, slightly astonished look that I find in so many of my childhood pictures. Maybe I realized that one day I was going to go to America and become president of the University of Minnesota. That would account for the astonished look. In truth, the opportunity to serve as a university president would have been a mighty astonishing idea when I attended my own graduate commencement. It was the furthest thing from my mind, as it probably is from yours, but—trust me—you never know . . .

That brings me back to my office in Morrill Hall and its clutter of mementos, my thoughts traveling 5,000 miles and many decades. I was surrounded by symbols of the wonderful world of learning in which I had had an opportunity to study and work for forty years. Thinking about my grandfather and father made me realize, of course, how precious all these things are that we tend to take for granted.

To me the University of Minnesota means first and foremost "opportunity for learning." There in my office was a calendar with serious young men in suits, white shirts, and ties, studying in the library in St. Paul in 1895; there were young women in long dresses holding their horses in front of the field house. There was the brick from old Memorial Stadium—and I thought I could hear the cheering when Bronco Nagurski broke through the line for another touchdown, running so hard, the legend goes, that he didn't stop till he hit the brick wall!

These were signs of tradition, the tradition of this University that is soon to be 150 years old: 150 years of dedication to the opportunity for learning. I thought about the amazing foresight of our ancestors—about

10,000 immigrants—who founded a major university on the frontier to serve the people, ordinary people, with opportunities for learning.

There on the wall in my office was a picture of the new Basic Sciences/Biomedical Engineering Building, just completed. The finest such facility in the world, supporting world leadership in a field of enormous importance to our society, supporting opportunities for learning for generations of young men and women.

There was my computer, the inevitable computer.

"Ding!" Another message. One of dozens, sometimes hundreds, a day, made possible by the foresight of my predecessor to invest in a telecommunications system capable of handling this rapidly developing technology. I can sit down and check every course offered each quarter, the instructor's background, the reading list, majors, how they prepare the students for certain degrees, certain job opportunities. I can even call up a video picture of the check-out area at the bookstore, made possible by hooking up the security camera to the computer, so we can see if the check-out lines are long.

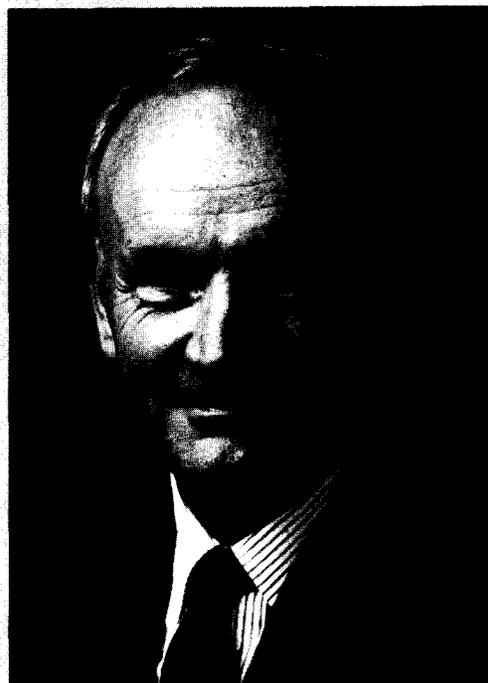
These are just a few of the symbols of a changing University of Minnesota, a University of Minnesota prepared to enter a new century, a new millennium, with opportunities for learning.

There in my office was a picture of the children in the Hans Christian Andersen School in Minneapolis, children of all races, young, expectant faces. Our students of the future. Is it the same expectancy that

I saw in my own eyes in the picture on my desk? Yes, of course.

On the wall is a picture of 10,000 middle school and junior high students from all over the state building the 40-foot globe in front of Northrop four years ago, in white hard hats. There I am, milling around with them, just having a grand old time in the biggest hard hat they could find, celebrating a wonderful learning partnership of public and private schools, University staff, faculty, students, and alumni, and corporate sponsors who gave money, equipment, and personnel time to "Build a New World." The University's learning opportunities are for those young people, and such partnerships among the University and the community make those opportunities a vivid reality.

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There in my office were the university seals from universities in China, Korea, and Indonesia—memorabilia from my trips to reconnect with our 18,000 alumni in the Pacific Rim.

The University of Minnesota offers learning opportunities for the children in the inner city and for students from all corners of the world.

There in my office was the Indian pipe from Pipestone and the key to the city of Lindstrom, memorabilia from my many community visits around the state to speak of the learning opportunities provided by the University of Minnesota. As I sat there and looked at these and many other memorabilia, I could hear the echoes of innumerable meetings around the table in the corner in my office—meetings with regents, faculty members, students, and constituents speaking about the need for opportunities for learning, in agriculture, medicine, business, law, education, architecture, engineering, the arts and sciences. There were echoes of meetings with alumni and donors: Yes, I will endow that professorship to give the University of Minnesota world leadership in this field, a field where we must provide learning opportunities. Yes, I will endow that scholarship that will make it possible for yet another student in a small town in Minnesota to gain access to the finest learning opportunities in the world.

There were echoes of moments of hard choices, echoes of the tough budget decisions that had helped claw loose \$132 million from our existing budget to make investments in learning opportunities for the future. There were echoes of moments of pride in this outstanding university: another break-through in science by one of ours, a new healing drug, an outstanding teacher who inspires students for life, alumni who have changed the world for the better. There were echoes of moments of shared exhilaration. I have had the opportunity to work in this wonderful world of learning.

Why do I share these glimpses of my office with you? You, the cream of the crop. You, the graduate students of this University. You, the holders of the highest degrees. You, who have had and used the finest learning opportunities the world has ever seen. I share these glimpses because it is so important that we remind ourselves of the fact that these opportunities for learning are not givens. They are not just there. They are the result of generations of effort. They are there because thousands of men and women have made the decision that opportunities for learning are central to our civilization and that our future depends on our ability to provide such learning opportunities.

I share these glimpses with you because it is important that we understand and recognize our past. I like having my grandfather's and father's desk in my office, because

it reminds me of the fact that I stand on their shoulders and had the opportunities for this endlessly rich life as an academic and a university president because they provided me with learning opportunities.

I speak to you about these matters because we must celebrate the enormous opportunities provided by the University of Minnesota and universities across the nation and the world. In the daily grind in the laboratory, the library, the field, or the classroom, not to speak of the President's Office, we sometimes forget that element of celebration. Let's shout the achievements of generations of faculty members and students at this University from the rooftops!

I speak to you about these matters because you are the vanguard of the generation that is going to make sure that learning opportunities continue to develop in our society, from the inner city to the farthest reaches of this world. You are the ones who are now standing on the shoulders of the faculty members on this stage and throughout this university. You are the ones who are going to give new generations the opportunity to stand on your shoulders to enjoy even better learning opportunities.

I want to end by saying thank you.

I want to say thank you because I had the opportunity to go to college and graduate school and learn from the finest scholars in my field. I came as an immigrant. I studied with a leading scholar, Professor Einar Haugen of Wisconsin and Harvard, who was the son of Norwegian immigrants. As a linguist, I have had the opportunity to participate in some small way in that fascinating world where that wonderful human capacity, language, is explored.

I have had the opportunity to be a faculty member at this magnificent university. I have worked with colleagues in many disciplines in the humanities, the sciences, and the professions. I have enjoyed extraordinary collegial relationships with people of vision, boundless energy, and total dedication to their fields and society. It has been a privilege.

I have had the opportunity to serve as president of this magnificent university. I have had the opportunity to work with governors and legislators. I have had the opportunity to work with leaders in our many major, worldwide corporations, with leaders in agriculture, with leaders in a broad spectrum of professions.

I have had the opportunity to travel throughout this state and to see the impressive grassroots of Minnesota: the people in the small towns and the rural areas as well as the large cities who are responsible for our unequalled

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quality of life. I have encountered their dedication, their hopes, their aspirations.

I have been able to travel to Europe and the Pacific Rim of Asia, meeting countless graduates who once sat in this auditorium at earlier commencements, who remember this University community with great fondness and sing the "Rouser" with many accents.

I have met many people like my grandfather, people who work with their hands as well as their minds. I have met people like my father, who through trouble and travail seek out learning opportunities.

And I have been associated with people like you, the graduates, who are fortunate enough to have the kind of learning opportunities that I have been blessed with.

For all this I am deeply grateful.

So, graduates, go to it. Understand the past and how it made our present by providing learning opportunities. Celebrate your good fortune in being part of one of the world's outstanding learning communities. And dedicate yourselves to a future in this magnificent tradition of learning.

Thanks and congratulations.

New Initiatives in Interdisciplinary Research

Continued from the June Research Review

Interdisciplinary Investigation of Transboundary Water Policy Issues Related to the Great Lakes Basin

\$97,000 over two years; COAFES, HHH, Natural Resources, VP for Research

For more information, contact Professor Sandra Archibald, 625-3533, sarch@hhh.umn.edu

This proposal inaugurates an interdisciplinary water policy research program at the University. While numerous scientific research programs on the Great Lakes exist, there is currently no coordinated water policy program to help focus technical and scientific water-related research on policy issues. This proposed interdisciplinary research program draws on the University's substantial expertise in water sciences—which incorporates the natural, physical, biological, and social sciences—to guide the development of an ongoing water policy research program in the Great Lakes Basin, focusing on Lake Superior. Highly regarded nationally as a policy research center, the University's Humphrey Institute of Public Affairs has the potential to play a pivotal role in the formulation of national and international water

policy regarding the future uses, protection, mitigation, and restoration of the Great Lakes, given its interdisciplinary focus and its capability in water policy research. The University has a unique opportunity to link scientists, economists, and policy makers from the United States and Canada to protect our global resource and ensure the continued economic growth and prosperity of the Great Lakes Basin region. An interdisciplinary water policy research program holds considerable promise for attracting significant funding over the next several years. Planning grants have been provided by the Ford Foundation, Minnesota Sea Grant, and the Canadian government. Identified potential funders include the United States and Minnesota Sea Grant Programs, the Legislative Commission on Minnesota Resources, the Great Lakes Protection Fund, and the U.S. Geological Survey's Water Resources Research Regional Grants Program.

Interdisciplinary Center for Development of Microsensor Technology in Genetic Testing

\$100,000 over two years; IT, Medical School

For more information, contact Professor George Barany, 625-1028, barany@chem.umn.edu

The development and widespread use of the polymerase chain reaction (PCR) and related DNA amplification systems have facilitated the rapid discovery of new genes. Allied with these advances are relatively new instruments (PCR thermal cyclers) for the sequencing, synthesis, and amplification of DNA. Although highly sensitive, DNA amplification-based testing is also very costly and not yet affordable for routine diagnostics. In addition, such tests are established only in specialized centers. In an effort to markedly decrease the cost of DNA testing, the Interdisciplinary Center for Development of Microsensor Technology in Genetic Testing proposes to develop a series of microsensors based on microfabrication techniques in silicon—of the sort that have revolutionized the electronics industry—for the detection of DNA products created by PCR. These sensors, referred to colloquially as "DNA on a chip," will rely on unique concepts and technologies developed at the University involving DNA-addressable arrays. This approach toward DNA detection with silicon-based microsensors offers significant advantages over conventional instrumentation through gains in efficiency and reduced cost of production. Through the collaboration of investigators from the University's Institute of Technology and Academic Health Center, the center will form the core of one aspect of a larger effort to create an integrated DNA testing system based on the use of a silicon substrate and microelectromechanical systems (MEMS) technology.

Misconduct

(continued from page 1)

The regents' policy also says "The president, with the recommendation of the vice president for research and the approval of the Faculty Senate, shall adopt procedures to implement this policy." Those procedures are defined in the 15-page draft University policy on academic misconduct.

Misconduct is Redefined

The existing policy defines academic misconduct as follows:

"Academic Misconduct," for the purpose of this policy, shall mean the fabrication or falsification of data, research procedures, or data analysis; destruction of data for fraudulent purposes; plagiarism; abuse of confidentiality; or other fraudulent actions in proposing, conducting, reporting, or reviewing research or other scholarly activity.

The proposed new regents' policy and new University policy both include the definition of academic misconduct reprinted below.

Misconduct in the pursuit of scholarship and research includes one or more of the following major offenses:

- (1) Falsification of data: dishonesty in reporting results, ranging from fabrication of data, improper adjustment of results, and gross negligence in collecting or analyzing data including the flagrant selective reporting or omission of conflicting data for deceptive purposes;
- (2) Plagiarism: taking credit for someone else's work or ideas, stealing others' results or methods, copying the writing of others without proper acknowledgment, or otherwise falsely taking credit for the work or ideas of another;
- (3) Abuse of confidentiality: taking or releasing the ideas or data of others which were shared with the legitimate expectation of confidentiality, e.g., stealing ideas from others' grant proposals, award applications, or manuscripts for publication when one is a reviewer for granting agencies or journals;
- (4) Falsification of research: deliberately misrepresenting research, including the progress of research, to a research sponsor;
- (5) Dishonesty in publication: knowingly publishing material that will mislead readers, e.g., misrepresenting data, particularly its originality, misrepresenting research progress, or adding the names of other authors without permission;
- (6) Deliberate violation of regulations: flagrant and repeated failure to adhere to or to receive the approval required for work under research regulations of fed-

eral, state, local or University agencies, including, but not limited to, guidelines for the protection of human subjects; protection of animal subjects; use of recombinant DNA; use of radioactive material; use of hazardous chemicals or biologicals; and conduct of classified research;

- (7) Property violations: stealing or destroying the property of others, such as research papers, supplies, equipment, or products of research or scholarship;
- (8) Retaliation: taking punitive action against an individual for having reported alleged major offenses;
- (9) Failure to report observed major offenses: covering up or otherwise failing to report major offenses or breaches of research ethics by others that one has observed.

The existing and proposed definitions all include special language regarding honest error and intent:

It is particularly important to distinguish academic misconduct from honest error and the ambiguities of interpretation that are inherent in the scientific and scholarly process, but are normally corrected by further research. Intent has been deliberately omitted as part of this definition, but should be considered if any disciplinary action is recommended.

Responsibility Shifts to VP for Research

Under existing policy, implementation is overall the responsibility of the senior vice president for academic affairs, and an individual allegation is assigned to a "senior administrator," typically the dean of the college where the accused "respondent" works.

In the proposed policy, overall responsibility would belong to the vice president for research or to some other "designated authority" named by the president, and an individual case is assigned to a "responsible administrator" named by the designated authority and "from a line unit different from the units of the respondent and complainant" (allegations are made by "complainants").

Changing these titles means small changes throughout the policy. Their significance is summed up in the passages regarding assignment of an allegation to an administrator.

The existing policy reads:

The senior vice president for academic affairs shall refer the case to the academic vice president, vice provost, or vice chancellor of the unit in which the alleged misconduct occurred. The academic vice president, vice provost, or vice chancellor shall refer the allegation to the dean of the unit in which the case originated. The dean shall be assigned to serve as the

{next page}

senior administrator and shall be responsible for pursuing all allegations to resolution. This includes directing an inquiry and, if necessary, an investigation of academic misconduct. If the dean has a conflict of interest with a case, the case shall be referred to a dean from another unit or another individual, who shall serve as the senior administrator.

The proposed new University policy reads:

The designated authority shall select a dean or other individual to act as the responsible administrator and to be responsible for pursuing the allegation to resolution. This includes directing an inquiry and, if necessary, an investigation of academic misconduct. The responsible administrator shall be from a line unit different from the respondent's and complainant's line units. The responsible administrator must have no conflict of interest with the case.

"Interim Administrative Action" is Spelled Out in Detail

Language regarding interim administrative action, meaning action by the University to reduce the risk and damage resulting from alleged misconduct, was changed by the regents last March, and changed again in the proposed policy.

Before last March, the academic misconduct policy did not speak of taking interim action until after an initial inquiry had determined that a thorough investigation was necessary. The March revision retained that old language, but added an earlier passage to make clear that interim action can be taken at any time in the process. The proposed new policies rearrange, consolidate, and add to that material.

The proposed regents' policy now says "Interim administrative actions will be undertaken, as necessary, to protect a) funds, b) the health and safety of research subjects and patients, and c) the interests of students and colleagues as well as to ensure that the purposes of any financial assistance are being carried out."

Among its "Overall Considerations," the proposed new University policy reads as follows:

As required by federal regulations (42 CFR, part 50, Subpart A and 45 CFR, part 689), the University reserves the right, at any stage in the process of inquiry, investigation, formal finding, and disposition, to have the designated authority take interim administrative actions, as necessary, to protect:

- (1) funds;
- (2) the health and safety of research subjects and patients;
- (3) the interests of students and colleagues.

Such actions may range from slight restrictions to reassignment of the activities of the respondent. In extreme circumstances, the respondent may be suspended temporarily. Any actions shall be in accordance with the procedures specified in the Board of Regents' policy, "Faculty Tenure," the contract between the regents and unionized groups, any other labor agreements, and other applicable employee policies. Interim administrative actions shall be taken in full awareness of how they might affect the respondent and the ongoing research projects of the University. Such administrative action is independent of the misconduct procedures in this policy and, of itself, shall not be considered as evidence of misconduct during the formal misconduct procedures. The reason for interim administrative action also must result from an event independent of the administrator who takes action, such as findings arising from an independent audit or charges brought by an independent person familiar with the facts of the situation. The responsible administrator and the designated authority shall examine the evidence and in consultation with the controller and Sponsored Projects Administration (SPA) take the least invasive course of action necessary to ensure that funds will be used for their intended purpose. Administrative action may, for example, result in sequestering federal funds of the principal investigator(s) or temporary appointment of a replacement principal investigator to approve budgetary decisions and authorize expenditures of federal funds.

Communication with Federal Agencies is Also Spelled Out

Changes regarding notification of sponsors are similar to those regarding interim action. Before March, the policy said the University would notify sponsors after deciding an allegation merited investigation. The March 14 changes preserve that language, but also describe conditions under which the University would notify sponsors before the decision to investigate. The proposed policies rearrange and consolidate that material.

The proposed regents' policy now says "Appropriate federal and other sponsoring agencies will be notified in accordance with their policies about health hazards, need to protect funds or equipment, possible criminal violations and other information as required."

Among its "Overall Considerations," the proposed new University policy describes those agency policies, as follows:

C. Communication with Federal Agencies and Other Sponsors

{next page}

All communication with federal and other sponsoring agencies regarding the requirements in this policy shall be conducted by the designated authority.

1. Notification of Sponsoring Agency

If the sponsoring agency of the academic activity requires notification of suspected academic misconduct, that agency shall be notified as soon as the decision has been made to undertake an investigation. Significant developments during the investigation, as well as the final determination of the case shall be reported to the sponsor when required.

2. Criminal Violations

If the responsible administrator obtains information at any stage of the inquiry that reasonably indicates the occurrence of possible criminal violations, the responsible administrator shall notify the designated authority who will inform the appropriate office of the sponsoring agency including ORI and NSF and the appropriate law enforcement officials within 24 hours.

3. ORI and NSF Requirements

a. Notification to ORI

PHS regulations (42 CFR, part 50, subpart A) require that, if NIH funds are involved, the director of the ORI shall be notified at any stage in the process when: (i) there is an immediate health hazard involved; (ii) there is an immediate need to protect federal funds or equipment; (iii) there is an immediate need to protect the interests of the persons making the allegations or of the individuals who are the subject of the allegations, as well as the co-investigators and associates, if any; (iv) it is probable that the alleged incident is going to be reported publicly; or (v) there is a reasonable indication of possible criminal violation. In that instance, the University must inform ORI within 24 hours of obtaining the information. ORI will immediately notify the Office of the Inspector General.

If the process is to be terminated, the ORI shall be notified of the planned termination including a description of the reasons for termination.

b. Notification to NSF

NSF regulations (45 CFR part 689) require that, if NSF funds are involved, NSF be notified or informed: (i) immediately if an initial inquiry supports a formal investigation; (ii) during such an investigation; and (iii) even before deciding to initiate an investigation or as required during an investigation if: the seriousness of apparent misconduct warrants; immediate health hazards are involved; NSF's resources, reputation, or other interests need protecting; federal action may be needed to protect the interests of a subject of the inves-

tigation or of other potentially affected individuals; or the scientific community or the public should be informed.

c. Final Report to NSF or ORI

A final report must be submitted to the appropriate federal agency and include: (i) a description of the policies and procedures under which the investigation was conducted; (ii) how and from whom information was obtained relevant to the investigation; (iii) the findings; (iv) the basis for the findings; (v) the actual text or accurate summary of the views of any individuals found to have engaged in misconduct; and (vi) a description of any sanctions taken by the institution.

Confidentiality is Promised

In March, the regents added to the passages in the policy that forbid retaliation against whistle-blowers, and they preserved the passages that say malicious false allegations will be disciplined. The proposed revisions introduce some additional changes in these matters:

To the specifications for an initial inquiry, the regents in March added that the procedures shall "take reasonable steps to protect the positions and reputations of those, who in good faith, make allegations of academic misconduct." In the proposed University policy, "take reasonable steps" becomes "make reasonable efforts."

The proposed new regents' policy ends its first paragraph with "The University encourages reporting of suspected misconduct and will take all reasonable steps in protecting the positions and reputations of those persons who in good faith make allegations of misconduct."

To the specifications for an investigation, the regents in March added the sentence "All parties involved shall be afforded confidential treatment to the maximum extent possible." The proposed University policy replaces that with "All parties involved in any steps of the process shall be afforded confidential treatment to the maximum extent possible under the law," and the proposed new regents' policy says "To the extent allowable by law all parties involved shall be afforded confidential treatment."

Where the current policy says "Allegations that have not been brought in good faith *may* lead to appropriate disciplinary actions," the proposed University policy says they "*shall* lead to appropriate disciplinary actions."

Problems are to be Resolved Quickly

The proposed new regents' policy adds these words regarding the pace of the process: "the following procedures should be pursued with all deliberate speed to resolve the allegation." The proposed new University policy adds that a written allegation must be submitted within ten days of the complainant's initial consultation

about the matter with an administrator or the Science and Scholarly Advisory Board.

Regarding the pace of an investigation, the proposed new University policy also makes the following additions (underscoring) and deletions (~~struck through~~) to the existing policy:

The investigation shall be conducted as expeditiously as possible and ~~generally~~ shall be completed within 120 days unless circumstances clearly warrant a longer period of time. However, the nature of some cases may render that schedule difficult to meet. If the panel determines that the deadline cannot be met, it shall request an extension from the responsible administrator and provide reasons for the extension, ~~which the senior administrator shall grant or deny. If necessary, the senior administrator shall submit a report to the sponsoring agency regarding this action.~~ . . . Upon receipt of the panel's report, the senior responsible administrator shall review the report and within ten working days determine whether to accept all or part of the panel's recommendations based on the preponderance of the evidence.

Other Small but Perhaps Significant Changes

To the existing paragraph that says a respondent facing an allegation may seek an advisor, the proposed University policy adds the sentence "Providing advice in these areas is not the role of the University's Office of General Counsel."

Among the respondent's rights, the proposed University policy adds "The respondent may suggest specific evidence to be reviewed or questions to be answered by others."

Where the existing policy directs committees of the Science and Scholarly Advisory Board to annually elect a chair, the proposed policies state that "The committees will determine their own operating procedures."

The proposed regents' policy adds the sentence "Procedures will be executed in a fair and impartial manner"; the proposed University policy adds "The University of Minnesota will provide fair and thorough investigations of allegations of academic misconduct."

Insignificant Changes

A dozen or so other changes—from "whether" to "whether or not," for example; and insertion of a definition of "NSF"—do not merit description here. *Research Review* will gladly point them out to anyone who asks.

by Phil Norcross

Effort Reporting

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Social security number
Sponsored account to cost share to
Nonsponsored account to cost share from
Cost sharing percentage
Time frame (period of time effective).

Regarding assistance reporting cost sharing, Sponsored Financial Reporting within the University's Controller's Office reports to sponsors the required cost sharing amounts based on the certified effort statements. ORTTA includes the shared costs in the development of the indirect cost rate proposal.

How Can Cost Sharing Be Reduced?

Departments cost share or absorb approximately \$15 million annually in direct costs associated with sponsored research. These are real costs. Obviously, spending levels of this magnitude reduce the funding departments have available for other purposes. In order to reduce the financial obligations of individual departments and the University, cost sharing can be minimized by 1) submitting proposals with realistic budgets requesting maximum funding by the sponsor; 2) limiting cost sharing in the proposal to mandatory cost sharing; and 3) managing department resources effectively.

Not properly recording cost sharing (particularly for the principal investigator, who must report effort on his/her project whether it is paid by the sponsor or not) does not reduce cost sharing. Instead, it places the department and the University at risk.

Reference Material

"Effort Certification Policy 2.1.1,"
http://www.fpd.finop.umn.edu/2/Sec1/Pol211/Effort_Certification.html

"Guidelines for Cost Sharing and Matching Funds on Sponsored Projects," <http://www.ortta.umn.edu/policy/costshar.htm>

Managing Sponsored Projects,
<http://www.ortta.umn.edu/manual/>

"Sponsors Require Accurate Documentation to Support Salaries & Wages," *Research Review*, June 1997

"Questions and Answers regarding Effort Certification," *Research Review*, July 1997

(*Research Review* articles can be accessed via ORTTA's home page at <http://www.ortta.umn.edu/>)

by Doyle Smith, effort reporting coordinator

Federal Grantees are Encouraged to Hire Welfare Recipients

In a recent letter to grantee institutions, the Bureau of Health Professions encourages grantees to employ welfare recipients, in accord with the federal welfare-to-work initiative.

John Westcott, grant management officer in the Bureau of Health Professions, wrote that the Department of Health and Human Services is "strongly committed to the objectives and goals of the President's welfare-to-work initiative. . . . We strongly encourage all recipients of grants and cooperative agreements to take steps to increase their efforts to hire and train and/or mentor welfare recipients."

Westcott enclosed a copy of the *Federal Register* announcement excerpted below:

U.S. Office of Management and Budget

Governmentwide Implementation of the President's Welfare-to-Work Initiative for Federal Grant Programs

For further information contact Barbara F. Kahlow, Office of Federal Financial Management, Office of Management and Budget, 202/395-3053.

On March 8, 1997, the President issued a memorandum to the heads of the executive departments and agencies entitled "Government Employment for Welfare Recipients." This memorandum directed all federal agencies to "hire people off the welfare rolls into available job positions in the government" and to submit proposed plans for "on-the-job training and/or mentoring programs."

To supplement this initiative, federal agencies were asked to encourage their grantees and their subrecipients to hire welfare recipients and to provide additional needed training and/or mentoring. This notice, which the Office of Management and Budget developed with the major federal grantmaking agencies, provides assistance to federal grantees in responding to the President's welfare-to-work initiative.

The federal procurement community has a "welfare-to-work" link on its acquisition reform network home page (<http://www.arnet.gov/welfare.html>).

Question: Is the provision of training for hired welfare recipients an allowable cost under federal assistance programs?

Answer: Yes. The cost of training provided for employee development is allowable under OMB's cost principles circulars.

Question: Are supportive services, such as transportation and day care services, for hired welfare recipients allowable costs under federal assistance programs?

Answer: Yes, to the extent that an organization's internal and established policy permits charging of such costs in a consistent manner. These costs are usually classified as fringe benefit costs and, like salaries and wages, are distributed to all of the organization's activities. In any case, fringe benefits in the form of transit benefits are an allowable cost under federal grants. Section 132 of the Internal Revenue Code of 1986 allows up to \$65 per month to be provided to employees tax free in the form of a "transit pass," or cash if a "transit pass" is not readily available, for distribution to employees. This benefit cannot be used in lieu of compensation, but must be paid in addition to any compensation otherwise payable to the employee.

Question: What are examples of appropriate jobs, requiring minimum on-the-job training, for which welfare recipients could be hired?

Answer: A welfare recipient's job placement should be commensurate with his or her education, skills, and abilities. Thus, a person with the required education, experience or skills for a specific position may be placed in such a position; however, persons without such needed education, experience or skills may be placed in an entry-level position. Several federal departments have identified appropriate entry-level job positions, including file clerk, mail and file clerk, office automation clerk, office automation trainee, computer clerk/assistant, claims processing clerk, custodial worker, printing plant worker, laborer, and motor vehicle operator. Generally, employees hired into these positions will be expected to perform such duties as the following: photocopy, receive and deliver mail, file, answer telephones, operate fax machines, maintain and distribute supplies, and clean laboratory equipment in research facilities.

from *Federal Register* 62.95 (16 May 1997)

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**Please send your new citations to
phil@ortta.umn.edu.**

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For Your Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

To receive other application materials and guidelines, please contact the agencies directly. Web sites and/or addresses are listed at the end of each article. In some stated cases, information may be obtained from ORTTA.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu; <http://www.research.umn.edu/research.html>.

Health Resources and Services Administration

The Health Resources and Services Administration has released the deadline dates for Title VII and VIII PHS Act programs for the Bureau of Health Professions. The deadline dates are much earlier than last year, although the list is tentative and subject to change. Application materials are available and may be downloaded from www.hrsa.dhhs.gov/bhpr/grants.html. Questions may be referred to Mrs. Brenda E. Selsler, 301/443-6960, bselsler@hrsa.ssw.dhhs.gov.

Graduate Training in Family Medicine (CFDA 93.379)	September 9
Predoctoral Training in Family Medicine (CFDA 93.896)	November 7
Podiatric Medicine (CFDA 93.181)	September 15
Faculty Development in Family Medicine (CFDA 93.895)	September 29
National Research Service Award (CFDA 93.186)	September 22
Nurse Practitioner and Nurse Midwifery (CFDA 93.298)	December 19
Professional Nurse Traineeships (CFDA 93.358)	November 3
Nurse Anesthetist Faculty Fellowships (CFDA 93.907)	December 1
Nursing Education Opportunities for Individuals from Disadvantaged Backgrounds (CFDA 93.178)	November 24
Nurse Anesthetist Traineeships (CFDA 93.124)	December 1
Nurse Anesthetist Education Program (CFDA 93.916)	February 2
Centers of Excellence Supplements (CFDA 93.157)	September 5

National Institutes of Health Institutional NRSA in Sleep Research

It has become apparent that sleep disorders and sleep deprivation are major public health problems affecting as many as 40 million Americans. Progress in understanding the neurobiology of sleep/awake states and the pathophysiological mechanisms of sleep disorders, especially molecular and genetic aspects, has been hampered by an inadequate number of health professionals trained in sleep biology, sleep disorders medicine, and relevant research.

The National Institutes of Health invite applications for National Research Service Award (NRSA) Institutional Training Grants (T32) to develop or enhance sleep research training opportunities. The overall goal is to increase the number of sleep researchers that are available to investigate the basic biology of sleep; to explore epidemiological, behavioral, and clinical aspects of sleep-related disorders; and to develop new approaches for the treatment and prevention of these conditions. Relevant disciplines include, but are not limited to, neuroscience, physiology, cellular biology, epidemiology, behavioral science, psychology, endocrinology, immunology, pharmacology, biochemistry, and genetics.

Levels of training include predoctoral and postdoctoral awards, in five-year and short-term research training positions.

This is an ongoing program with annual deadlines (see below). A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. Applicants are strongly encouraged to contact program directors in the various institutes before preparing an application. They are listed in the announcement.

Application receipt dates (as listed in the May 16, 1997 *NIH Guide*) are:

NIAAA	May 10	NIAID	Sep 10
NIAMS	May 10	NICHD	May 10
NIDCD	May 10	NIDR	Sep 10
NIDA	May 10	NIEHS	May 10
NEI	May 10	NHLBI	Jan 10/May 10
NHGRI	May 10	NIMH	May 10
NINDS	May 10	NINR	May 10

According to the NIH Division of Research Grants, all institutes not listed above accept proposals at the standard receipt dates of **January 10, May 10, and September 10** annually. General guidelines for T32 Training Grants may be found in the *NIH Guide* referenced above or on the NIH web page at www.nih.gov, and contain a list of contacts for each institute.

■ Food and Drug Administration Clinical Studies of Safety and Effectiveness of Orphan Products

The Food and Drug Administration (FDA) is announcing the anticipated availability of funds for grants to support clinical trials on the safety and effectiveness of products for a rare disease or condition (i.e., one with a prevalence, not incidence, of fewer than 200,000 people in the U.S.). Some changes have been made to the program; all previous announcements are superseded.

The goal of the program is the clinical development of products for use in rare diseases or conditions where no current therapy exists or where current therapy would be improved. FDA provides grants to conduct clinical studies intended to provide data acceptable to the agency which will either result in or substantially contribute to approval of these products.

Applicants must propose a clinical trial of one therapy for one indication. The applicant must provide supporting evidence that a sufficient quantity of the product to be investigated is available to the applicant in the form needed for the clinical trial. The applicant must also provide supporting evidence that the patient population has been surveyed and that there is reasonable assurance that the necessary number of eligible patients is available for the study.

It is anticipated that \$11.3 million will be available, of which \$3.5 million will be for noncompeting continuation awards. This will leave \$7.8 million for funding approximately 30 new applications. Any phase clinical trial is eligible for up to \$100,000 in direct costs per annum plus applicable indirect costs for up to 3 years. Phase 2 and 3 clinical trials are eligible for up to \$200,000 in direct costs per annum plus applicable indirect costs for up to 3 years.

Application receipt dates are **October 15, 1997**, and **March 16, 1998**. Application forms are available from, and completed applications should be submitted to Robert L. Robins, Grants Management Officer, Division of Contracts and Procurement Management (HFA-520), Food and Drug Administration, 5600 Fishers Lane, Park Building Room 3-40, Rockville, MD 20857; 301/443-6170.

■ American Antiquarian Society

The American Antiquarian Society (AAS) is this country's oldest national historical organization. The society's library holds the preeminent and most accessible collection of pre-1877 printed materials, as well as rich collateral collections of secondary and reference works, manuscripts, and graphic arts materials. The collection can support research on any region and on virtually any topic having to do with America up to the last quarter of the nineteenth century.

The society has announced a competition for the first Mellon Post-Dissertation Fellowship for a period from June 1, 1998, through August 31, 1999. Scholars who are not more than three years beyond receipt of the doctorate are eligible to apply. The purpose of the fellowship is to provide the recipient with time and resources to extend research and/or to revise the dissertation for publication.

Any topic relevant to the society's library collections and programmatic scope—that is, American history and culture through 1876—is eligible. Applicants may come from such fields as history, literature, American studies, political science, art history, music history, and others relating to America in the period of the society's coverage. The fellow is obliged to give first refusal on the resulting manuscript to a new book series published jointly by Cambridge University Press and AAS.

The 12-month stipend for this fellowship is \$30,000. The deadline for applications is **October 14, 1997**. Address inquiries and requests for application materials to Mellon Post-Dissertation Fellowships, American Antiquarian Society, 185 Salisbury Street, Worcester, MA 01609-1634; 508/752-5813 or 755-5221, fax 508/754-9069, cfs@mwa.org.

■ American Cancer Society

For the upcoming October deadlines, American Cancer Society (ACS) application forms are being revised (revised August 1997) and are available in either IBM or MAC versions. However, earlier forms (revised July/December 1996) are still acceptable but are available in IBM format only.

ACS will no longer *routinely* distribute application materials and disks. Forms may be downloaded from the ACS website at www.cancer.org.

Questions? Please contact Lorenzo Harmon, 404/329-7558 or grants@cancer.org.

■ Social Science Research Council

The Social Science Research Council (SSRC) is an autonomous, nongovernmental, not-for-profit, international association devoted to the advancement of interdisciplinary research in the social sciences. It pursues this goal through a wide variety of fellowship and grant programs, conferences, workshops, research projects and publications, and summer training institutes. The council encourages the development of new methods, the confrontation of theoretical controversies, and identification of promising topics and issues for new empirical investigation.

In selecting topics for attention, the SSRC gives priority to those that seem likely to gain from the contributions of several disciplines, show promise of responding to collaborative effort and discussion, and lend themselves to transnational and/or comparative approaches.

Deadlines for the many programs begin **September 1, 1997**, and continue through **April 1, 1998**. A copy of the brochure is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. You may contact the SSRC at 810 Seventh Avenue, New York, NY 10019; 212/377-2700, fax 212/377-2727, <http://www.ssrc.org>.

■ Department of Justice

Data Resources Program Funding for the Analysis of Existing Data

The National Institute of Justice (NIJ), Department of Justice, is seeking applicants to conduct original research using data from the National Archive of Criminal Justice Data, especially data from previous NIJ-funded projects. The institute is particularly interested in proposals addressing the issues of 1) sentencing, 2) drugs and the criminal justice system, 3) violence, and 4) policing. Special consideration will be given to proposals providing direct applications to criminal justice policy or practice or suggesting innovative applications of emerging statistical techniques and analytic methodologies.

The application deadlines are **August 15** and **December 15, 1997**, and **April 15, August 15, and December 15, 1998**. Interested applicants should call the National Criminal Justice Reference Service at 800/851-3420 to obtain a copy of "Data Resources Program Funding for the Analysis of Existing Data" (document number SL 000232). The solicitation is available electronically via telnet at ncjrsbbs.ncjrs.org, or gopher@ncjrs.org; 71, or the web at <http://www.ncjrs.org>.

■ Department of Justice

Model Definitions and Data Collection Protocols for Statistical Data Describing Levels of Domestic Violence.

The Department of Justice, Office of Justice Programs, announces a public solicitation for cooperative agreement projects to develop model definitions and data collection protocols for statistical data describing levels of domestic violence.

Although a majority of states and the federal government collect statistics related to domestic violence offenses, there is a great variation in how each agency, state, or program 1) defines the offenses, and 2) collects the data. Statutory language across states varies with references to family violence, domestic violence, intimate violence, etc. Criteria for inclusion or exclusion (as determined by the victim/offender relationship) are widely divergent. Some include child victims as well as adults; others are more restrictive. Types of relationships and various living situations are handled differently across jurisdictions. This plethora of definitions and data collection standards may serve local purposes but create barriers for comparability and the extent to which data can be aggregated across jurisdictions or data sources.

The present proposed project addresses these issues and creates a framework to maximize comparability, evaluation, and understanding of the prevalence and incidence of "domestic violence."

Project duration is estimated at between 12 and 18 months. Costs are estimated not to exceed \$500,000.

Proposals must be postmarked on or before **September 3, 1997**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. For further information contact Carol G. Kaplan, Chief, Criminal History Improvement Programs, Bureau of Justice Statistics, Room 303, 633 Indiana Avenue NW, Washington, DC 20531; 202/307-0759. Application materials may be obtained from Getha Hilario, 202/633-3031.

■ Department of State

Collaborative Projects in Science and Technology Between U.S. and Spanish Cooperators

A program has been established under the Agreement for Scientific and Technological Cooperation between the Government of the United States of America and the Government of the Kingdom of Spain. The solicitation for this program provides grants for collaborative projects submitted by U.S. and Spanish researchers.

Projects must help the U.S. and Spain utilize science and apply technology by providing opportunities to exchange ideas, information, skills, and techniques, and to collaborate on scientific and technological endeavors of mutual interest and benefit. Priority fields for 1998 proposals are life sciences, environment, information and communication technology, energy and high-energy physics, and materials sciences.

The application deadline is **October 31, 1997**. More information, copies of the program announcement, and applications may be obtained from the Commission for Culture, Educational and Scientific Exchange between the United States and Spain, Paseo Gral. Martinez Campos 24, 28010 Madrid, Spain; (34-1)308-2436; fax (34-1)308-5704, postmaster@comisionfulbrighth.es.

American Social Health Association

The American Social Health Association (ASHA) is requesting applications for postdoctoral research fellowships in sexually transmitted diseases (STD). ASHA awards fellowships in all areas of STD research, targeting those the association feels are particularly underfunded. It has supported projects in chancroid, chlamydia, gonorrhea, group B streptococcal infection, herpes, HIV, human papillomavirus (HPV), pelvic inflammatory disease (PID), and syphilis. Many projects have been in basic science but applications that address clinical issues have been funded as well. This year, ASHA is encouraging applications in clinical research from MDs.

These are two-year fellowships with stipends currently set at \$27,500 for the first year and \$28,750 for the second. Applicants are not required to be U.S. citizens, but must be studying at established institutions within the U.S. or its territories.

The application deadline is **October 15, 1997**. A complete copy of the announcement, including application forms, is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. To obtain additional information, please write or call Kay Flaminio, American Social Health Association, 100 Capitola Drive, Durham, NC 27713; 919/361-8400.

Department of Energy Partnerships for Academic-Industrial Research

The Office of Basic Energy Sciences, Office of Energy Research, U.S. Department of Energy (DOE) is calling for applications for performance of basic research to support high-quality, basic research on fundamental issues important to the efficient, economical, safe, and environmentally responsible production and use of energy that will involve interactions of the academic basic research community with the industrial research community.

Because the transition from discovery to development and deployment is not a linear process and because both basic and applied researchers contribute to problem definition, discovery, and understanding, this program seeks to promote, encourage, and facilitate partnerships between researchers in the academic and industrial sectors. In particular, emphasis is placed in stimulating interactions between a principal investigator in an institution of higher learning with a counterpart in industry with significant involvement of students.

It is anticipated that approximately \$1.5 million will be available with individual awards ranging from \$50,000 to \$150,000 annually with terms from one to three years.

A brief preapplication, referencing program notice 97-15, is requested by **November 5, 1997**. Formal proposals will be invited and will be due **January 14, 1998**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu.

For information, contact the following individuals in the appropriate division of interest: (All street addresses are Office of Energy Research, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290).

Dr. Paul H. Maupin, Chemical Sciences Division,
301/903-4355, paul.maupin@oer.doe.gov.

Dr. Gregory L. Dilworth, Energy Biosciences Division
301/903-2873, greg.dilworth@oer.doe.gov.

Dr. Robert Price, (Engineering) Engineering and
Geosciences Division, 301/903-3565,
bob.price@oer.doe.gov

Dr. Wolfgang Wawersik, (Geosciences) Engineering
and Geosciences Division, 301/903-5829,
wolfgang.wawersik@oer.doe.gov.

Dr. Timothy Fitzsimmons, Materials Sciences Division,
301/903-9830, tim.fitzsimmons@oer.doe.gov.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	400	\$ 99,035,762
Awards Processed		
June 1997	193	45,355,968
Proposals Submitted		
July 1996 - June 1997	3,929	698,141,971
Awards Processed		
July 1996 - June 1997	2,862	343,342,115
Proposals Submitted		
July 1995 - June 1996	4,192	687,005,635
Awards Processed		
July 1995 - June 1996	3,171	347,700,674

Development of Genetic Markers for QTL in Swine	
Leeson Alexander, Veterinary Pathobiology	National Pork Producers Council
Lawrence B. Schook, Veterinary Pathobiology	\$18,000 - 07/01/97-06/30/98
Selective Nonpeptide Opioid Ligands	
Philip S. Portoghese, Medicinal Chemistry	NIH, NIDA
	\$379,064 - 06/01/97-5/31/98
Comparison of Absorption of Lamotrigine Compressed Tablets after Oral vs Rectal Administration	
Angela Bimbaum, Neurology	Glaxo Wellcome
	\$55,270 - 04/20/97-94/20/98
Interferon-Alpha and Saliva Secretion in Patients with Sjogren's Syndrome	
Nelson L. Rhodus, Oral Medicine, Diagnosis, Radiology	Veldona, USA
	\$35,000 - 05/01/97-12/31/97
Health Information Access for Rural Nurse Practitioners	
Christine Heine, Nursing	NIH, NLM
Ellen Nagle, University Libraries	\$142,902 - 03/01/97-02/28/98
A Comprehensive Needs Assessment of Stroke Survivors	
Ruth A. Lindquist, Nursing	American Heart Association, Inc.
	\$35,000 - 05/01/97-08/31/98
Isothiocyanates and Nitrasamine Carcinogenesis	
Stephen S. Hecht, Cancer Center	NIH, NCI
	\$972,771 - 09/27/96-07/31/97
In Vivo Assessment of a Novel Mechanical Mitral Valve in the Sheep Model	
Richard W. Bianco, Surgery	Carbomedics, Inc.
	\$145,995 - 12/01/96-07/21/97
Data Storage System for Functional Magnetic Resonance Imaging and Magnetic Resonance Spectroscopy	
Kamil Ugurbil, Radiology	NIH, NCRR
	\$350,000 - 06/15/97-06/14/98

Phenyton in the Treatment of Cocaine Abuse

Sheila Specker, Psychiatry
Nina Graves, Pharmacy

Psychiatric Research Institute
\$82,102 - 06/09/97-06/09/98

Renal Diseases in Childhood

Alfred F. Michael, Pediatrics

NIH, NIAID
\$344,648 - 04/01/97-03/31/98

Characterization of Pharyngeal Streptococi

Edward L. Kaplan, Pediatrics

Abbott Laboratories Fund
\$339,900 - 12/17/96-12/16/98

Pediatric Scientist Development Program

Margaret Hostetter, Pediatrics

Saint Jude Children's Research Hospital
\$192,172 - 07/01/97-06/30/98

Youth and AIDS Projects, Case Management

Gary Remafedi, Pediatrics

St. of Minn., Department of Health
\$84,150 - 01/01/97-12/31/97

Production and Absorption of Intestinal Gas

Michael Levitt, Medicine

NIH, NIDDK
\$70,154 - 06/01/97-05/31/98

Human Papillomaviruses and Malignant Disease

Anthony J. Faras, Human Genetics

Minnesota Medical Foundation
\$9,802 - 07/01/97-06/30/98

Structural and Functional Studies of Mu Opioid Receptors

Horace Loh, Pharmacology

Ping Law, Pharmacology

NIH, NIDA
\$345,574 - 04/15/97-03/31/98

Targeting Toxin Polypeptides to Tumor Vasculature

S. Ramakrishnan, Pharmacology

NIH, NCI
\$193,345 - 05/01/97-04/30/98

Control of Cell Motility by Second Messengers and Expression

James R. Chelikowsky, Chemical Engineering and Materials Science

March of Dimes Birth Defects Foundation
\$68,929 - 06/01/97-05/31/98

The Spinohypothalamic and Spinotelencephalic Tracts

Glenn J. Giesler, Jr., Cell Biology and Neuroanatomy

NIH, NINDS
\$196,320 - 04/01/97-03/31/98

Mechanisms of Nerve Growth Cone Turning and Branching

Paul C. Letourneau, Cell Biology and Neuroanatomy

NIH, NICHD
\$186,132 - 04/01/97-03/31/98

Molecular Interactions of Actin

David D. Thomas, Biochemistry, Medical School

National Science Foundation
\$14,100 - 05/01/97-04/30/98

An Edition of Isaac Newton's Optical Papers

Alan E. Shapiro, Physics and Astronomy

National Science Foundation
\$99,857 - 07/01/97-06/30/99

<p>Experiments in Hypernuclear Physics Dietrich K. Dehnhard, Physics and Astronomy U.S. Department of Energy \$208,000 - 06/01/97-05/31/98</p>	<p>Scalable Parallel Algorithms for Data Mining Vipin Kumar, Computer Science and Engineering George Karypis USDoD, Army \$75,000 - 06/01/97-05/31/00</p>
<p>Rare Gas and Nitrogen Studies: Lunar, Meteoritic, Terrestrial Robert O. Pepin, Physics and Astronomy Richard H. Becker, Physics and Astronomy National Aeronautics and Space Administration \$138,000 - 03/15/97-12/14/97</p>	<p>Acoustic Emission Monitoring Fatigue Cracks in Steel Bridge Girders Carol K. Shield, Civil Engineering P. M. Bergson, Civil Engineering St. of Minn., Department of Transportation \$50,000 - 06/16/97-09/30/98</p>
<p>Characterization of Perfluorinated Liquid-Crystal Compounds and Two-Dimensional Behavior of Liquid-Crystal Free-Standing Films Cheng-Cher Huang, Physics and Astronomy National Science Foundation \$440,047 - 07/01/97-06/30/01</p>	<p>Pesticides in Rain in Minnesota Paul Capel, Civil Engineering St. of Minn., Department of Agriculture \$10,000 - 05/15/97-02/28/98</p>
<p>High-Resolution Surface Tension Measurements of Liquid Crystal Free-Standing Films and its Temperature Variations Cheng-Cher Huang, Physics and Astronomy American Chemical Society, Petroleum Research Fund \$50,000 - 09/01/97-08/31/99</p>	<p>U.S.-Japan Joint Seminar: Information Exchange on Photophysics Paul F. Barbara, Chemistry National Science Foundation \$12,000 - 06/01/97-05/31/98</p>
<p>Evaluation of LIDAR (Portable Laser Technology) for Area Sensing of Vehicle Emissions David B. Kittelson, Mechanical Engineering John Deere Product Engineering Center \$79,544 - 06/01/97-07/30/98</p>	<p>Rare-Earth Arsenide, Magnetic Semi-Metal Epitaxy for Opto-Electronics C. J. Palmstrom, Chemical Engineering and Materials Science USDoD, Air Force \$160,000 - 06/01/97-05/31/00</p>
<p>Dynamic Modeling of Teflon Coriolis Meters Paul J. Strykowski, Mechanical Engineering Arthur G. Erdman, Mechanical Engineering Fluoroware, Inc. \$20,199 - 06/16/97-07/10/97</p>	<p>Electrocrystallization of Nanostructured Molecular Materials Michael D. Ward, Chemical Engineering and Materials Science USDoD, Navy \$127,655 - 06/01/97-05/31/00</p>
<p>Interacting Particle Systems and Queueing Networks Maury Bramson, Mathematics National Science Foundation \$55,800 - 07/01/97-05/31/98</p>	<p>Synthesis Characterization and Properties of Vinylcyclohexane (PVCH) Containing Block Copolymers Frank S. Bates, Chemical Engineering and Materials Science Marc A. Hillmyer, Chemistry Dow Chemical Co. \$66,211 - 06/02/97-06/01/98</p>
<p>The Dynamics of Space-Time Scot Adams, Mathematics National Science Foundation \$24,434 - 06/01/97-05/31/98</p>	<p>Aircraft Scheduling and Conflict Resolution in Air Traffic Management Yiyuan Zhao, Aerospace Engineering and Mechanics National Aeronautics and Space Administration \$99,493 - 05/01/97-04/30/98</p>
<p>High-School Mathematics Day in Conjunction with the UM Talented Youth Mathematics Program, Math Fun Fair Harvey B. Keynes, Mathematics University of Maryland \$3,000 - 03/01/97-06/30/97</p>	<p>Optimal Takeoff Procedures for Category A Helicopters Yiyuan Zhao, Aerospace Engineering and Mechanics National Aeronautics and Space Administration \$58,020 - 03/01/97-02/28/98</p>
<p>Investigations of Quaternary Stratigraphy, Washington County David L. Southwick, Geology and Geophysics Gary N. Meyer, Geological Survey Robert Tipping, Geological Survey Washington County \$64,428 - 06/01/97-07/01/98</p>	<p>Experimental, Analytical, and Computational Study of Nematic Optical Elastomers Richard D. James, Aerospace Engineering and Mechanics National Science Foundation \$46,784 - 05/15/97-04/30/98</p>
<p>Dynamical Processes of Epitaxial Growth Philip I. Cohen, Electrical Engineering National Science Foundation \$358,995 - 05/01/97-04/30/00</p>	<p>Course and Curriculum Development R. Dennis Cook, Statistics Sanford Weisberg, Statistics National Science Foundation \$58,694 - 07/01/97-06/30/98</p>
<p>Maintaining Power Quality During Voltage Sags Ned Mohan, Electrical Engineering National Science Foundation \$103,957 - 06/01/97-11/30/98</p>	<p>Campus Program for Japanese Teachers Eric S. Nelson, English as a Second Language Council on International Educational Exchange \$84,734 - 05/01/97-09/30/97</p>
<p>Development of a Crab and Ground Fish Classification System Ahmed H. Tewfik, Electrical Engineering State of Alaska \$81,958 - 03/15/97-08/31/98</p>	<p>Metropolitan Growth Project John S. Adams, Geography St. of Minn., Department of Transportation \$37,932 - 06/16/97-12/31/97</p>

Modeling International Capital Flows and Exchange Rates Movements

Timothy Kehoe, Economics
National Science Foundation
\$61,404 - 07/01/97-06/30/98

Improvement of the Efficiency of Agrobacterium-Mediated Gene Transfer to Plants

Anath Das, Biochemistry (CBS)
Purdue University
\$182,069 - 05/01/97-04/30/99

Leadership Seminars

John M. Bryson, Hunphrey Institute
Minnesota State Colleges and Universities (MNSCU)
\$6,000 - 01/24/97-03/21/97

Evaluation of Industrial Biosolids as a Soil Amendment

Carl J. Rosen, Soil, Water, and Climate
Thomas R. Halbach, Soil, Water, and Climate
City of Becker, MN
\$30,000 - 06/01/97-05/31/99

Fungal Disease Resistance of Transgenic Oat

Richard J. Zeyen, Plant Pathology
Purdue University
\$169,066 - 05/01/97-04/30/99

Transient Expression Assays for Genes that Enhance Disease Resistance in Barley

William R. Bushnell, Plant Pathology
Purdue University
\$120,320 - 05/01/97-04/30/99

Selection of Plants for Drought, Heat, and Salt Tolerance Directly from Existing High-Yielding Lines of Maize Seed with a Newly Developed Method Using Abscisic Acid

Paul Li, Horticultural Science
Ling Chen Jian, Horticultural Science
U.S. Department of Agriculture
\$56,296 - 05/10/97-05/10/00

Effect of Diet Manipulation on Hydrogen Sulfide Levels and Odor in Confinement Swine Facilities

Gerald Shurson, Animal Science
R. Nicolai, Biosystems and Agricultural Engineering
Minnesota Pork Producers Association
\$15,000 - 05/01/97-04/30/98

The Effect on Odor Emmissions when Spraying Oil for Dust Control Inside Buildings

Larry D. Jacobson, Biosystems and Agricultural Engineering
Kevin A. Janni, Biosystems and Agricultural Engineering
Lee Johnston, West-Central Agricultural Experiment Station, Morris
Minnesota Pork Producers Association
\$15,000 - 05/01/97-04/30/98

Low-Cost Biofilters for Odor Control in Minnesota

Kevin A. Janni, Biosystems and Agricultural Engineering
R. Nicolai, Biosystems and Agricultural Engineering
Larry D. Jacobson, Biosystems and Agricultural Engineering
Minnesota Pork Producers Association
\$14,928 - 05/01/97-04/30/98

A Proposal to Assess the Status of Tigers in Thailand

James L. Smith, Fisheries and Wildlife
National Fish and Wildlife Foundation
\$43,000 - 05/01/97-04/30/98

Review of Research Pertaining to Northern Goshawks in Western Great Lakes and Ontario

David E. Andersen, Fisheries and Wildlife
USDI, Geological Survey
\$3,000 - 05/08/97-09/01/97

Experience of Families Where Both Children and Their Mothers are Abused

Jeffrey Edleson, Social Work
Sandra K. Beeman, Social Work
David and Lucile Packard Foundation
\$96,976 - 07/01/97-06/30/98

Molecular Classification of Unknown Bacterial Isolate

Dan O'Sullivan, Food Science and Nutrition (COAFES)
Minnesota Mining and Manufacturing Co.
\$19,765 - 06/01/97-02/28/98

Evaluating Computers to Construct Physics Understanding

Douglas Huffman, Curriculum and Instruction
Frances Lawrenz, Curriculum and Instruction
San Diego State University Foundation
\$13,558 - 01/01/97-12/31/97

Lakescaping for Wildlife and Water Quality

Roger Clemence, Architecture
St. of Minn., Department of Natural Resources
\$2,101 - 05/01/97-05/15/97

Energy Efficient Windows Information Products

John Carmody, Building Research Center
U.S. Department of Energy
\$30,000 - 04/01/97-03/31/98

Reduce Severity of Wild Rice Diseases

Robert F. Nyvall, North-Central Agricultural Experiment Station, Grand Rapids
Minnesota Cultivated Wild Rice Council
\$38,000 - 07/01/97-06/30/99

Technology Development Program

Gerard J. McCullough, Center for Transportation Studies
Dennis Foderberg, Center for Transportation Studies
St. of Minn., Department of Transportation
\$297,932 - 06/16/97-06/30/99

Cholesteryl Ester Levels in Mammalian Tissues

Howard L. Brockman, Jr., Hormel Institute
NIH, NHLBI
\$182,159 - 03/01/97-02/28/98

Network Site

Dale Schatzlein, Continuing Education and Extension
New England Foundation for the Arts
\$50,000 - 01/06/97-12/31/98

Yang Jig Test Program

Blair R. Benner, Natural Resources Research Institute, Duluth
Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
USS Technical Center
\$50,000 - 03/21/97-03/27/97

Development of Marketable Extracts from Larch

Robert M. Carlson, Chemistry, Duluth
Larex International
\$57,230 - 02/01/97-01/31/98

Efficiency in Supercritical Fluid Chromatography

Donald P. Poe, Chemistry, Duluth
American Chemical Society, Petroleum Research Fund
\$25,000 - 06/01/97-08/31/99

Electrophilic Addition in Construction of Carbon Skeletons

Ronald Caple, Chemistry, Duluth
American Chemical Society
\$25,000 - 06/01/97-08/31/99

Phase I Reconnaissance Survey on T.H. 58

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
Susan Mulholland, Archaeometry Laboratory, Duluth
John R. Bower, Archaeometry Laboratory, Duluth
St. of Minn., Department of Transportation
\$88,326 - 05/23/97-11/03/97

Fax number
 ORTTA's Web site

612/624-4843
<http://www.ortta.umn.edu>

	<u>name</u>	<u>number</u>	<u>e-mail</u>
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennessen	626-7718	kate@ortta.umn.edu
USDI (non-IT), St. of Minn., DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	Ed Welsch	624-5571	edward@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed., MnDOT	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	Andy Swope	625-1359	andy@ortta.umn.edu
NSF (non-IT)	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	Doyle Smith	626-9741	doyle@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development			
Administrative director	Tom Mahoney	320/589-6465	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Giunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

Mailing List Changes

ORTTA cannot change the faculty mailing list.

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(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

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RESEARCH REVIEW

Office of Research and Technology Transfer

September 1997

Duluth Undergrads Famous Among Mathematicians

In the sixty years of the William Lowell Putnam Mathematical Competition—the “Olympics of college mathematics”—Ioana Dumitriu is the first woman to win. Dumitriu, a Romanian, won the competition last spring, while a sophomore at New York University.¹ Then she spent the summer doing mathematics research at the University of Minnesota, Duluth.

Mike Doyle, former president of the Council on Undergraduate Research, puts UMD among the “top 5 percent of the 600 institutions offering undergraduate research programs,” according to a recent front page of the *Duluth News Tribune*.²

Among the leaders of UMD's undergraduate research is Joseph Gallian, professor of mathematics. He has been supervising a summer undergraduate research program at Duluth for twenty years, with funding from NSF, the National Security Agency, and UMD. Students are recruited nationwide, and over the years the 75 students have or soon will publish 61 articles in mathematics journals, chiefly *Discrete Mathematics*.³

“The follow-through on manuscript preparation is my most difficult job,” says Gallian. “When the students leave Duluth I usually have, at best, a first draft of their work. It typically takes many letters and phone conversations before the manuscripts are ready to be submitted to journals.”

Of the student-researchers who have worked with Gallian, 57 have gone on to graduate school, most of them to Harvard, Berkeley, Chicago, MIT, and Princeton, and 25 have since earned doctorates.

“It has been my experience that carefully selected undergraduates are capable of doing publishable research in mathematics,” writes Gallian. “These students have the ability, the desire, and the time. They don’t know how to start or how to finish. To begin, they need problems and guidance. To end, they need assistance with manuscript preparation and the publication process. In between, they need encouragement and reassurance. It has been my privi-

lege to fulfill this role and to make a contribution to their development as research mathematicians.”

Among other leaders of undergraduate research at UMD are Conrad Firling and Raj Karim of biology, Ronald Caple of chemistry, Douglas Dunham of computer science, Klaus Jankofsky of English, Tom Bacig of sociology-anthropology, and Marian Stachowicz of computer science and engineering. Gallian attributes the success in his math program to five past participants who have returned as advisors—David Witte, Douglas Jungreis, David Moulton, Dan Isaksen, and Tim Chow.

- ¹ Dumitriu’s achievement is described by Karen Arenson, *New York Times*, 1 May 1997, p. A19.
- ² The *Duluth News Tribune* article, by staff writer Mary Thompson (9 Aug. 1997), is available at <http://newslibrary.infi.net/duluth/>.
- ³ Complete bibliography is available at <http://www.d.umn.edu/~jgallian/>.

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Doyle Smith, 612/626-9741, or Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 or leased by the University of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 3
September 1997

Editor: Phil Norcross
Editorial Assistant: Tove Jespersen
Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

National Science Foundation

New Review Criteria Take Effect at NSF on October 1

The National Science Foundation will use new criteria to judge the merit of proposals beginning October 1, start of the federal fiscal year.

The new criteria ask two questions:

What is the intellectual merit of the proposed activity?

What are the broader impacts of the proposed activity?

To clarify those two questions, NSF's new "Instructions for Proposal Review" offer a number of "potential considerations," while cautioning that not all of those considerations apply in any given case, and that the two criteria need not carry the same weight in a given review.

Together, the new criteria and considerations read as follows:

Criterion 1. What is the intellectual merit of the proposed activity?

Potential considerations: How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, please comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to the necessary resources?

Criterion 2. What are the broader impacts of the proposed activity?

Potential considerations: How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does

the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

The new criteria will be used to review all proposals received by NSF on or after October 1, 1997, except proposals in response to announcements and solicitations that specifically call for use of the current criteria.

The National Science Board, which governs NSF, adopted the new criteria last March, after several months of review and comment.

The criteria being replaced were adopted in 1981 and ask reviewers to address four issues: researchers' competence, the intrinsic merit of the proposed work, the utility or relevance of the work, and the proposed work's effect on the infrastructure of science and engineering.

New criteria are necessary, said NSF, because the present criteria are not well understood or applied consistently. The new criteria, it said, are clearer, easier to apply, more flexible, and more consistent with the new strategic plan that NSF adopted in 1994.

"The need to reexamine the current criteria was prompted by an evolution in NSF programs," said NSF's press release, "to include a stronger focus on broad educational initiatives, the integration of research and education, and partnered research activities."

National Institutes of Health

New Explicit Statements of Review Criteria

Dr. Harold Varmus, director, NIH, announced at the May 5, 1997, meeting of the Peer Review Oversight Group (PROG) that use of five explicitly-stated review criteria will be implemented across NIH and will be effective for unsolicited research grant applications submitted on or after October 1, 1997. The new criteria will be used when reviewing these applications in the February 1998 review cycle.

Discussion of the rating of grant applications was originally raised because of a perceived need to refocus the review of grant applications on the quality of the science

and the impact it might have on the field, rather than on details of technique and methodology. Use of these criteria will be monitored and reviewed for possible modification after approximately one year. Debate and discussion are welcome. Comments may be sent by e-mail to dder@nih.gov.

Review Criteria

The goals of NIH-supported research are to advance understanding of biological systems, improve the control of disease, and enhance health. In written reviews, comments

(continued on next page)

on the following aspects of the application should be made in order to judge the likelihood that the proposed research will have a substantial impact on the pursuit of these goals. Reviewers will please address each of these criteria, and consider them in assigning the overall score, weighting them as appropriate for each application. Note that the application does not need to be strong in all categories to be judged likely to have a major impact and thus deserve a high priority score. For example, an investigator may propose to carry out important work that by its nature is not innovative but is essential to move a field forward.

1. **Significance.** Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?
2. **Approach.** Are the conceptual framework, design, methods, and analyses adequately developed, well-integrated, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

3. **Innovation.** Does the project employ novel concepts, approaches, or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?
4. **Investigator.** Is the investigator appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers (if any)?
5. **Environment.** Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support?

From a letter by Geoffrey Grant, director, Office of Policy for Extramural Research Administration, NIH.

Clinical Trials Research: Enhancing the University's Competitive Position

September 15, 1997
7:30 a.m. to 11:00 a.m.
at the Radisson Metrodome

All members of the University with an interest in clinical trials are invited.

The Academic Health Center Private Sector Research Support Organization (PSRSO) is sponsoring this conference in order to inform faculty, staff, and administrators about the dramatic changes taking place in corporate-sponsored clinical-trials research and the steps the University is taking to improve its competitiveness in this area.

This conference seeks to:

- Describe the new, competitive external environment driving changes in the performance of clinical trials,
- Present the University system that supports/regulates clinical trials,
- Reach broad agreement about actions needed to enhance the conduct of clinical-trials research, and
- Foster the creation of a clinical-trials community within the University.

Agenda:

Why do clinical-trials research at the University?

Alan Hirsch, assistant professor, Medicine

Forces driving change in clinical trials research

David Zuckerman, Customized Improvement Strategies

Enhancing clinical-trials research: AHC initiatives

Leo Furcht, head, Laboratory Medicine and Pathology

Responses to a changing research environment

David Brown, director, General Clinical Research Center

Moirra Keane, director, Research Subjects' Protection Programs

Ed Wink, interim associate vice president for research, ORTTA

For more information, call Judith Teumer, 625-2145, teume001@tc.umn.edu, or James Cloyd, interim director, Clinical Trials Center, 624-4609, cloyd001@tc.umn.edu.

Grants Management Project Status Report on EGMS

The EGMS Committee would like to thank all of the University staff who have taken time to familiarize themselves with this new system and provide us with their comments and suggestions. The interest shown by the University community in EGMS has been most enthusiastic. Over 85 users have logged into the EGMS system since July 1.

While the initial focus of this project was to generate proposal budget templates for various agencies, the BA23 form and the expertise database components of EGMS have offered staff the opportunity to use electronic tools even before forms for all the agencies and programs are available.

The implementation of EGMS through October 1, 1997, has targeted the departments in the Focus Grants Management Project (FGMP): Surgery and Epidemiology.

The EGMS team has been meeting regularly with these two groups to provide assistance and hands-on training. Several other departments have requested training sessions, have used the BA23, have begun to setup the expertise database for their staff, and have created proposals. ORTTA staff expect that a number of proposals for the NIH October 1 deadline will be prepared using this system.

The major focus for this fall will be to give overview presentations on the EGMS system to faculty groups. We will then follow with more focused training sessions on preparing proposals using EGMS and how to set up departments and colleges for electronic routing and approval of proposals and BA23 forms. If you would like a presentation to a department or collegiate meeting, please call Winifred A. Schumi at 624-5750 or send e-mail to wschumi@ortta.umn.edu.

Call for Clinical Research Summit

Citing "extensive evidence of a decline in the number of physicians engaged in clinical research and (evidence) of forces within medicine that are sidetracking young physicians from pursuing careers that involve clinical research," two administrators from the Bowman Gray School of Medicine of Wake Forest University are calling for a "Clinical Research Summit."

James Thompson, vice president and dean, and Jay Moskowitz, senior associate dean at Bowman Gray, made their call for action in a commentary in the July 16 issue of JAMA (Journal of the American Medical Association) and at a Washington press conference held in conjunction with a July 10 and 11 town meeting on clinical research sponsored by the Institute of Medicine.

"We must not allow the financial bottom line or the movement toward self-gratification to eclipse the commitment to the health and well-being of Americans. We must protect American academic medicine from slipping from excellence into mediocrity," said Thompson and Moskowitz. "What is needed now is a major national initiative to address a crisis of this magnitude."

The two administrators "call on American medicine to establish a Clinical Research Summit of key leadership in clinical research from major academic health centers in the nation."

The research summit, modeled after an education summit called by President George Bush, could have these objectives, suggest Thompson and Moskowitz:

—"Establish a process for setting broad goals in clinical research on a national level."

—Seek enhanced flexibility in the use of federal and state funds to meet those goals through regulatory and legislative changes.

—Restructure training for clinical research "to maximize effectiveness in attracting and preparing clinicians for their roles as investigators."

from *Washington Fax*, 24 July 1997

National Science Foundation New Grant Proposal Guide and Proposal Forms Kit

The National Science Foundation has published an updated version of the NSF *Grant Proposal Guide* (GPG)(NSF 98-2) and *Proposal Forms Kit* (NSF 98-3), which supersede prior versions. The principal purpose of the revision is to incorporate the revised NSF merit review criteria (see page 3).

The new version will be effective on October 1, 1997. A summary of significant changes is available electronically on NSF's home page at <http://www.nsf.gov/bfa.cpo/gpg/chng.htm>. The complete text of the Grant Proposal Guide is available at <http://www.nsf.gov/bfa/cpo/gpg/start.htm>. Please address any questions or comments about the GPG to the Division of Contracts, Policy & Oversight, Policy Office, 703/306-1243 or policy@nsf.gov.

U.S. Patents Issued to the University during April, May, and June 1997

Bioactive Tricyclic Ibogaine Analogs

To treat cocaine addiction and the use of other addictive substances

Inventors: Simon M. N. Efange, Radiology; Deborah C. Mash, non-University

Enzymatic Fluorometric Assay for Adenylate Cyclase

Measures AC activity in, for example, tissue or fluid samples, as a means to studying, for example, altered physiology of transplanted or failing human hearts

Inventors: Keith G. Lurie, Phi Wieg, Atsushi Sugiyama, Medicine

Apparatus for Eliminating Acoustic Oscillation in a Hearing Aid by Using Phase Equalization

To reduce undesirable feedback in the hearing aid

Inventors: Ramesh Harjani, Rongtai Wang, Electrical Engineering

Compounds that Enhance the Concentration of Glutathione in Tissues

To develop therapies to prevent formation of cataracts and other aging-related damage to other tissues

Inventors: William B. Rathbun, Ophthalmology; Jonathan F. Cohen, Herbert T. Nagasawa, Medicinal Chemistry; Michael E. Garst, non-University

Distortion-Compensated Phase Grating and Mode-Selecting Mirror for a Laser

Method of making a custom diffractive mirror for a laser resonator

Inventor: James R. Leger, Electrical Engineering

DNA Sequence-Based HLA Typing Method

To improve immunological tissue matching

Inventors: Pedro Santamaria, Jose J. Barbosa, Medicine; Michael T. Boyce-Jacino, Human Genetics; Anthony J. Faras, Microbiology; Stephen S. Rich, Laboratory Medicine and Pathology

Use of Delta Opioid Receptor Antagonists to Treat Immunoregulatory Disorders

To develop therapies to elevate depressed immune response associated with some disorders

Inventors: Philip S. Portoghese, Medicinal Chemistry; Burt M. Sharp, Kristin Linner, non-University

Optically-Active Isomers of Dideoxycarbocyclic Nucleosides

A therapeutic method employing an antiviral compound

Inventors: Robert Vince, Mei Hua, Medicinal Chemistry

Oxidative Dehydrogenation Process

For production of methanol or other liquid fuels from natural gas

Inventors: Lanny D. Schmidt, Sameer S. Bharadwaj, Chemical Engineering & Materials Science

Method of Enhancing the Immunotherapeutic Activity of Immune Cells by Depletion/Positive Selection of Cell Subsets

For enhancing the immunotherapeutic activity of immune cells by depleting immune cells of a cell subset that down-regulates the immune responses

Inventors: Robin L. Geller, Pediatrics; Fritz H. Bach, Augusto C. Occhoa, Laboratory Medicine & Pathology

Bioreactor Device with Application as a Bioartificial Liver

To provide an artificial human liver, especially for patients awaiting liver transplants

Inventors: Russell A. Shatford, Scott L. Nyberg, Frank B. Cerra, Surgery; Matthew T. Scholz, Wei-Shou Hu, Chemical Engineering & Materials Science

Septal Defect Closure Device

A system and method for passing a device through a catheter and repairing a defect in the wall of the heart

Inventor: Gladwin S. Das, Medicine

Method for Treating Kawasaki Syndrome by Administration of an Anti-TSST-1 Agent which is not Gamma Globulin

Part of a group of technologies for diagnosing Kawasaki syndrome by identifying specific toxins, and for treating it with an antitoxin

Inventors: Patrick M. Schlievert, Microbiology; Donald Y.M. Leung, Cody Meissner, David Fulton, Brian Kotzin, non-University

Method for Diagnosing Kawasaki Syndrome

Part of a group of technologies for diagnosing Kawasaki syndrome by identifying specific toxins, and for treating it with an antitoxin

Inventors: Patrick M. Schlievert, Microbiology; Donald Y.M. Leung, Cody Meissner, David Fulton, non-University

Isolated Nucleic Acid Molecule Coding for Toxin Associated with Kawasaki Syndrome and Uses Thereof

Part of a group of technologies for diagnosing Kawasaki syndrome by identifying specific toxins, and for treating it with an antitoxin

Inventors: Patrick M. Schlievert, Microbiology; Donald Y.M. Leung, Cody Meissner, David Fulton, non-University

Evaluation and Treatment of Patients with Progressive Immunosuppression

To identify patients having T lymphocytes capable of activation for autologous adoptive immunotherapy, and for identifying agents that cause or reverse immunosuppression

Inventors: Cynthia M. Loeffler, Surgery; Augusto C. Ochoa, Laboratory Medicine & Pathology; Hiromoto Mizoguchi, John J. O'Shea, Dan L. Longo, non-University

Research and Technology Transfer

Proposal and Award Activity - Fiscal Year 1997

The table below shows the distribution of proposals submitted and awards received during FY 1997 among University colleges. One word of caution: Proposals submitted during one fiscal year are generally not awarded until the next year. Comparing the level of proposals submitted in one

year to awards received in the same year is not appropriate. For example, the Institute of Technology submitted 602 proposals but received 611 awards; the proposals for those awards were submitted in a previous year.

University of Minnesota

Proposal and Award Activity Fiscal Year 1997

By College

College	Proposals Submitted		Awards Received	
	Number	Amount	Number	Amount
Medical School	1,304	\$210,750,681	804	\$107,302,328
School of Dentistry	50	6,353,352	41	4,393,428
College of Pharmacy	44	9,126,825	33	3,192,514
School of Nursing	35	6,618,911	20	2,270,335
School of Public Health	270	77,209,351	166	40,273,524
College of Veterinary Medicine	161	16,963,919	80	4,791,843
UMD School of Medicine	46	6,058,279	22	1,892,790
University Hospitals - CUHCC	15	1,762,612	18	1,784,540
Health Center Administration	0	0	8	4,283,156
Total-Health Sciences	1,925	\$334,843,930	1,192	\$170,184,458
Institute of Technology	602	\$137,608,352	611	\$84,351,898
College of Biological Sciences	158	30,119,482	111	10,509,627
College of Liberal Arts	115	19,751,938	84	10,669,642
Architecture & Landscape Architecture	14	842,528	11	666,443
General College	8	2,312,358	8	1,601,634
College of Agricultural, Food, and Environmental Sciences	321	\$33,730,918	238	\$12,516,856
College of Natural Resources	110	10,548,489	91	4,103,135
College of Human Ecology	53	21,425,535	35	3,841,479
Other Agricultural Programs (Experiment Station, MES, etc.)	42	5,950,678	50	6,838,019
College of Education	158	\$28,656,959	136	\$12,291,259
VP for Research	109	17,249,809	75	9,491,553
Carlson School of Management	11	1,432,283	11	2,679,410
HHH Institute of Public Affairs	15	26,025,754	13	2,732,106
Law School	4	973,851	5	833,768
Continuing Education & Extension	22	614,666	15	460,393
UM-Duluth	199	21,137,802	139	7,654,305
UM-Morris	23	665,678	13	123,089
UM-Crookston	16	893,393	13	482,183
Other Units	21	2,015,713	11	1,310,861
GRAND TOTAL	3,929	\$698,141,971	2,862	\$343,342,118

Netscape [Budget Period Expense Summary]

File Edit View Go Bookmarks Options Directory Window Help

UNIVERSITY OF MINNESOTA
Budget Period Expense Summary

Date: 08/14/97
Time: 19:07:54

Provides budget period information for a specific sponsored project by expense category (object); Includes ability to drill down to other levels of detail.
Until Sponsored Financial Reporting Adjustments are made (SEE BELOW Budget Period Closed equal YES), expenses may be over or under budget.
User Input: 123 6789 03 09/30/96-09/29/97

NOTE: If a column header is highlighted/underlined, you can Click on it for a definition

Please e-mail questions or comments to finreports@cafe.tc.umn.edu

Account Description	
Fund	1697 - UMT-NIH-GRANTS-LOC
Area	123 - RESEARCH DEPARTMENT
Org	6789 - SPONSORED PROJECT
Grantor	0501010 - NIH-DIV OF RSRCH RESOURCES
PI Name	MAGNUM P I
Project Period	09/30/94-09/29/97
Budget Period	09/30/96-09/29/97
Total Prior Budget Period Adj.	1975.82
Total Selected Budget Period Adj.	0.00
Budget Period Closed	NO

If Object is highlighted/underlined, you can Click on it to view the Detail behind it

Object	Expense Category	Current Expense Budget (a)	Expenses (b)	Account Balance (before encumb) (a-b)	Encumbrances (c)	Avail (d) (a-c)
7000	ACADEMIC SALARIES	0.00	0.00	0.00	0.00	
7010	CIVIL SERVICE & UNION SALARIES	27,178.00	13,541.92	13,636.08	0.00	13
7100	ACADEMIC FRINGE BEN-DEPT CHG	0.00	0.00	0.00	0.00	
7103	CS & UNION FRINGE BEN-DEPT CHG	3,106.00	1,341.28	1,764.72	0.00	1
7200	PURCHASE/PROFESSIONAL SRVCS	2,376.00	1,109.92	1,266.08	0.00	1
7300	GENERAL OPERATING SUPPLIES	200.00	54.73	145.27	0.00	
7301	GENERAL OPERATING SERVICES	0.00	0.00	0.00	0.00	
7310	PRINT/DUPL/BINDING/GRAPHIC DES	0.00	0.00	0.00	0.00	
7311	SPONSORED PUBLICATION COSTS	0.00	0.00	0.00	0.00	
7320	LABORATORY/MEDICAL SUPPLIES	1,665.00	477.15	1,187.85	0.00	1
7321	LABORATORY/MEDICAL SERVICES	0.00	0.00	0.00	0.00	
7330	COMPUTER SOFTWARE	0.00	0.00	0.00	0.00	
8020	REPAIRS & MAINTENANCE	0.00	0.24	(0.24)	0.00	
8100	EQUIPMENT	0.00	0.00	0.00	0.00	
8210	EQUIPMENT-COMPUTER	755.00	763.00	(8.00)	0.00	
Total Direct Costs		35,280.00	17,288.24	17,991.76	0.00	17
8500	GRANT/CONTRACT INDIRECT COSTS	2,762.00	1,332.74	1,429.26	0.00	1
Total		38,042.00	18,620.98	19,421.02	0.00	19

You can e-mail this report by filling in the 2 boxes:

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Send to: 8-MAIL

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Netscape [Sponsored Financial Reporting Budget Period Adjustments]

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UNIVERSITY OF MINNESOTA
Sponsored Financial Reporting Budget Period Adjustments

Date: 08/14/97
Time: 19:55:44

Provides budget period adjustments detail information at the Area/Org/Obj/Subobject level
User Input: 123 6789 03 09/30/96-09/29/97

NOTE: If a column header is highlighted/underlined, you can Click on it for a definition

Please e-mail questions or comments to finreports@cafe.tc.umn.edu

Prior Period Adjustments								
Object	Sub Object	Expense Category	Date	Document ID	Vendor	Document Description	Line Description	Adjustment Amount
7300	50	GEN OPER SUP	NULL	JVSTR40625198	NULL	NULL	NULL	(39.00)
7300	50	GEN OPER SUP	NULL	JVSTR40748836	NULL	NULL	NULL	25.97
Subtotal								(13.03)
7320	25	LAB/MED SUPP	NULL	PV61552928028	NULL	NULL	NULL	(26.05)
7320	30	LAB/MED SUPP	NULL	PV61552928013	NULL	NULL	NULL	(125.30)
7320	40	LAB/MED SUPP	NULL	JVSTR40625206	NULL	NULL	NULL	(105.60)
7320	40	LAB/MED SUPP	NULL	JVSTR40625251	NULL	NULL	NULL	(10.26)
7320	40	LAB/MED SUPP	NULL	JVSTR40753993	NULL	NULL	NULL	(232.71)
Subtotal								(499.92)
8020	20	REP/MAINT	NULL	PV60825609284	NULL	NULL	NULL	42.73
Subtotal								42.73
8200	55	EQUIPMENT	NULL	PV61552609863	NULL	NULL	NULL	(1,457.28)
Subtotal								(1,457.28)
8500	00	INDIRECT CST	NULL	JV61510000026	NULL	NULL	NULL	(10.70)
8500	00	INDIRECT CST	NULL	JVOHRUN	NULL	NULL	NULL	(37.62)
Subtotal								(48.32)
Total Prior Period Adjustments								(1,975.82)

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Print Document Done

Grants Management Project

Budget Period Expense Summary Now Available on Web

The Budget Period Expense Summary provides summary and detailed budget-period information for a specific sponsored project. A budget period is a unit of time within an overall sponsored project defined by a specific detailed budget, a specific length of time, and/or a specific task or activity.

What makes this report different than the other reports on the Web?

Many of the grants and awards received by the University are for multiple years, with requirements for annual reporting to the sponsoring agencies. Until now, central reporting has been limited to either inception-to-date reporting or to the University's fiscal year (July through June). Now, however, principal investigators and administrative staff may view reports for an individual budget period within a multi-year award.

Included in the report are the prior and current budget-period information as well as inception-to-date financial

The financial report web page is at

<http://financial.reports.umn.edu>

Want to browse? Click on the gray
"Demo" button



No access code required!

data. It will assist with identifying and managing variances and potential carry-forward amounts, as well as avoiding overdrafts. This information will also be useful in preparing continuation requests. It is expected that this information will decrease the duplicate entry into a departmental system.

The companion to the Budget Period Expense Summary is the Sponsored Financial Reporting Budget Period Adjustments. This report provides detailed information as to the adjustments made after the end of a budget period. This information matches the report sent to the sponsor.

As of this announcement, the data necessary to create the budget period summaries has been entered into the system for most, *but not all* accounts. The remainder should be available by the end of September. Nonetheless, the budget period reports do now provide inception-to-date information for all accounts.

Detailed Payroll Encumbrance and Expense Information for Your Grants

The Payroll Encumbrance and Expense Summary may now be viewed on the web. Principal investigators, in surveys and focus sessions, requested salary, fringe, and encumbrance information by employee. You may also see the fringe rate that was used and the encumbrance end-date. The report provides this level of detail for a closed month, by account number (area-org).

This brings the total number of payroll reports available on the web to seven. The earlier six reports were designed primarily for staff who process payroll in the departments. They contain detail on salary only for specific pay periods, by account, by object, or by person. Employees wishing to view any of these seven reports must have HERDB access.

How to Obtain Access to the Reports

For now, there are two separate forms to request access to these reports:

For access to financial reports, contact the Financial Systems Support Helpline at 612/624-1617. For payroll reports contact the OIT Client Assistance Center at 612/624-0555.

Want to See More?

A demo of all sponsored financial reports may be viewed by anyone, internal or external to the University, by clicking on the gray "Demo" button at <http://financial.reports.umn.edu>. A "snapshot" of each sponsored report and any drill-down reports are available for viewing, and you need not have an access code to see them. Please come and visit!

by Michele Gross, Business Services

Graduate School News

Graduate School Endowed Fellowships

Congratulations are extended to the 1997-98 Graduate School Endowed Fellowship recipients. The fellows were selected by faculty committee in a University-wide competition, with decisions based on the strength of the overall academic record, the timeliness of progress toward the degree, cohesiveness of the study or research plan and the clarity with which it was conveyed to the nonspecialist, and the strength of the letters of recommendation. The students are supported by endowed income from wills, trusts, and gifts from organizations or individuals.

Alexander P. Anderson and Lydia Anderson Fellowship

Purpose and funder: To support students who have completed either a bachelor's or a master's degree at the University of Minnesota and who are currently pursuing a graduate degree in the plant or animal sciences. Alexander Anderson worked his way through the University of Minnesota studying mechanical drawing and chemistry. He graduated in 1894 and later completed an M.S. at the University. After receiving a Ph.D. in botany from the University of Munich, he served as an assistant professor of botany at the University of Minnesota (1899). In subsequent years he taught at Clemson and Columbia Universities. The inventor of the process of puffed wheat and puffed rice, Dr. Anderson spent most of his life on research to improve the process.

Recipients:

Rebecca A. Melton, Entomology
Hygienic Behavior and Distribution of
Octopamine in the Honey Bee Brain
Adviser: Marla Spivak

Susan J. Pennington, Interdisciplinary Archaeological
Studies

In Search of Brother Cadfael's Garden: The
Archaeology of Early Medieval Herbalism
Adviser: Joy McCorrison

Charles J. Brand Fellowship

Purpose and funder: To support graduate students doing study/research in the botanical sciences. Charles Brand graduated from the University of Minnesota in 1902 with a degree in botany and provided for this fellowship in his will.

Recipient:

Lewis N. Lukens, Plant Biological Sciences
Teosinte Branched1 and the Evolution of Grass
Morphology
Adviser: John Doebley

Carolyn M. Crosby Fellowship

Purpose and funder: To support students engaged in field-based botanical investigation. Carolyn Crosby earned a master's degree in botany in the early 1900s. The fund was established by her brother, John Crosby, and other relatives.

Recipients:

Lori A. Biederman, Conservation Biology
Distribution Patterns and Life History Characteristics of Wood Nettle (*Laportea canadensis*) in the Big Woods Ecosystem
Adviser: Edward Cushing

Stephanie L. Neid, Plant Biological Sciences
De-icing Salt as a Selective Pressure Causing Population Differentiation in *Bromus inermis* Leysser (Smooth Brome Grass)
Adviser: David Biesboer

Susan J. Pennington, Interdisciplinary Archaeological
Studies

In Search of Brother Cadfael's Garden: The Archaeology of Early Medieval Herbalism
Adviser: Joy McCorrison

Louise T. Dossdall Fellowship

Purpose and funder: To support women graduate students in any field of the natural or physical sciences who show exceptional promise for a successful career in research. Louise Dossdall entered the University of Minnesota in 1912 and completed her Ph.D. here in 1922. An expert on mushrooms and ornamental plants, she taught plant pathology at the University of Minnesota for 41 years. She established the fellowship in her will.

Recipients:

Sonia M. Altizer, Ecology
Host Movement and Disease Dynamics: Interactions Between Monarch Butterflies and a Protozoan Parasite
Adviser: Donald Alstad

Penny J. Beuning, Chemistry
Biochemical and Biophysical Approaches to Understanding Protein-Transfer RNA Recognition
Adviser: Karin Musier-Forsyth

Uma Krishnamurti, Pathobiology
Alterations in Human Glomerular Epithelial Cells Interacting with a Diabetically Modified Matrix
Adviser: Effie Tsilibary

Graduate School News

Grants for Research Abroad

Purpose and funder: To support graduate students conducting dissertation research abroad. Funds come from various sources, including a Frances E. Andrews-Hunt Fund grant.

Recipients:

Paul D. Barclay, History

Hill Tribes, Plainsmen, Progressive Nation-States and Declining Empires: Japanese and United States Colonial Rule in Taiwan and the Philippine Islands, 1890s-1930s

Adviser: Byron Marshall

Stefanie A. Brachfeld, Geophysics

Testing the Fidelity of Sediments as Geomagnetic Field Recorders

Adviser: Subir Banerjee

Thomas S. Gelatt, Wildlife Conservation

Behavioral Ecology of Male Weddell Seals in McMurdo Sound, Antarctica

Adviser: Donald Siniff

Ana M. Gomez, History

"Al oficio de las armas": The Militias in Late Colonial Guatemala, 1739-1839

Adviser: Carla Rahn Phillips

Lori L. Pommerenke, Conservation Biology

Responses to Decreasing Biodiversity on Common Properties in Northeastern Thailand

Adviser: Anne Kapuscinski

Gregor W. Schuurman, Ecology

The Detritivores of Semi-arid African Savannas: Community and Ecosystem Processes

Adviser: Shahid Naeem

Stanwood Johnston Memorial Fellowship

Purpose and funder: To support graduate students of promise in the fields of biochemistry, chemistry, geology, geophysics, microbiology, and physics. The memorial fund was established by the will of Juliet Johnston in honor of her son Stanwood, who died while studying at the University of Chicago. Juliet Johnston was the widow of John Black Johnston, former Dean of the College of Arts and Sciences at the University of Minnesota. Before assuming the deanship, he had a noteworthy career as an M.D. and neurologist in the Department of Anatomy.

Recipient:

Rebecca A. Urbanek, Chemistry

Total Synthesis of Okadaic Acid and Analogs to Study Protein Phosphatase 2A Regulation

Adviser: Craig Forsyth

Harold Leonard Fellowship in Film Studies

Purpose and funder: To support graduate students doing study/research in film history, criticism, theory, or aesthetics. The fund was established by the will of Clara Lefkovits in honor of her son, Harold Leonard.

Recipients:

Matthew L. Basso, American Studies

The Anaconda Audience: Reading the (Counter) Narratives of World War II Race and Gender Relations in Motion Picture Newsreels and Feature Films

Adviser: David Roediger

Kristine J. Butler, French

Aural Identities: The Voice in French Text and Film

Adviser: Tom Conley

Jenifer E. Fennell, English

Clichés to Live By: The Good and Bad News About History in Contemporary Film

Adviser: Robin Brown

Sarah H. Laslett, American Studies

Oscar Micheaux and Spike Lee: Bookends on a Century of Independent Black Filmmaking

Adviser: David Roediger

Marissa J. Moorman, History

National Identity and Film in Angola

Adviser: Allen Isaacman

Graduate School News

Eva O. Miller Fellowship

Purpose and funder: To support graduate students in the broad areas of psychology and of statistics and measurement who are engaged in research. Eva O. Miller was the wife of W. S. Miller, a faculty member in the Department of Educational Psychology at the University of Minnesota from 1916 to 1948. During two periods, 1937-40 and 1943, he served as acting dean of the Graduate School. He was best known for his outstanding research on the measurement of high-level ability, including the authorship of the Miller Analogies Test. The funding for the fellowship comes from royalty income from the Miller Analogies Test.

Recipients:

John S. Bielinski, Educational Psychology
Gender Differences in Mathematics Achievement
Test Scores: The Item Difficulty Factor
Adviser: Mark Davison

W. John Curtis, Child Psychology
Attentional Functioning as a Risk and Protective
Factor for the Development of Competence
Adviser: Ann Masten

Lisa N. Legrand, Psychology
Parental Conflict or Divorce and Offspring Behavioral
Problems: Is There a Genetic Link?
Adviser: Matt McGue

Frederick L. Oswald, Psychology
Assessing the Accuracy and Representativeness of
Individual Differences in Meta-analysis: A
Conceptual Review and Empirical Investigation
Adviser: John Campbell

Anne M. Sebanc, Child Psychology
All Friendships Are Not Created Equal: Qualitative
Features of Preschoolers' Friendships
Adviser: Megan Gunnar

Yuh-Tsuen Tzeng, Educational Psychology
The Joint Effect of Memory Capacity and Domain
Knowledge on Readers' On-line Detection of
Causally Inconsistent Sentences
Adviser: Paul van den Broek

Nicole E. Wellman, Child Psychology
Relational and Overt Aggression in Early
Adolescence
Adviser: Nicki Crick

William F. Stout Fellowship

Purpose and funder: To support graduate students in the intermediate years of the Ph.D. program in the humanities and social sciences. William Stout was born in Menomonie, Wisconsin, in 1898. His father, James H. Stout, founded Stout State College in 1891. James was a member of the Wisconsin State Senate for sixteen years and served as chairman of the Senate Committee for Education. He and William earned their wealth in the lumber business. William left a sizable bequest to be used for scholarships at various colleges and universities. It was determined by the presidents of Stanford University and the University of California that the University of Minnesota should be among the twelve institutions to receive funds under the will.

Recipients:

Nevzat I. Eren, Economics
Decomposition of Community Excess Demand
Functions
Adviser: Marcel Richter

Emily B. Todd, English
The Transatlantic Context: Sir Walter Scott and
Nineteenth-Century American Literary History
Adviser: Edward Griffin

Torske Klubben Fellowship

Purpose and funder: The Torske Klubben is a Minneapolis luncheon club of men of Norwegian heritage who are deeply interested in Norway and Norwegian-American relationships. Since 1946, the club's primary activity has been to support graduate students from Norway to attend the University of Minnesota. In 1983 the club also established a fellowship for University of Minnesota graduate students to conduct research or study in Norway.

Recipients:

Christoffer Amlo, Electrical Engineering
(from Norway)

Martha A. Easton, Sociology (to Norway)

Terry A. Fingerhut, Interdisciplinary Archaeological
Studies (to Norway)

Edel Mauritzen, Educational Psychology
(from Norway)

Dorthe K. Troeften, English (from Norway)

Graduate School News

Thomas F. Wallace Fellowship

Purpose and funder: To support graduate students in the intermediate years of the Ph.D. program in the humanities and social sciences. Thomas Wallace was born at the American embassy in Bogota, Colombia. As a child of Presbyterian missionaries, he moved 41 times before the age of 14 when his family settled in Minneapolis. He graduated from the University of Minnesota in 1893 and from the University's Law School in 1895. He practiced law from 1895 until 1918 when he joined Farmers and Mechanics Savings Bank; he ultimately became president of the bank and chairman of the board. He established the fellowship in his will.

Recipient:

Graham Wood, Music

The Development of Song Forms in the Broadway and Hollywood Musicals of Richard Rodgers and Lorenz Hart, 1932-1945

Adviser: James Hepokoski

Foster Wheeler Fellowship

Purpose and funder: To support graduate students in the physical sciences conducting energy research. Funds are provided annually by Foster-Wheeler Twin Cities, Inc.

Recipient:

Anand Bhattacharya, Physics

The Search for the Non-linear Meissner Effect and Unconventional Pairing in High-Temperature Superconductors

Adviser: Allen Goldman

Woman's Club of Minneapolis Fellowship

Purpose and funder: To support a graduate student with high scholarship and leadership qualifications.

Recipient:

Louise O. Weldon, Curriculum and Instruction

Adviser: Fred Finley

National Institutes of Health

MEDLINE Now Searchable via Web

The 3,800-plus biomedical journals indexed by MEDLINE can be searched with the web browser on your desk. Go to <http://www.ncbi.nlm.nih.gov/PubMed/>.

The new "PubMed" service, created by the NIH's National Library of Medicine, provides electronic searching of MEDLINE and NLM's databases for DNA and protein sequences, biomolecular structures, and complete genomes.

PubMed also provides links to 30 journals that provide complete text via the web—including *Science*, *Cell*, the *New England Journal of Medicine*, and the *Journal of Biological Chemistry*.

According to NLM, the system indexes more than 9 million articles from 70 countries, and adds 1,000 articles a day. Its archives go back to 1966.

The screenshot shows the PubMed website interface. At the top, the browser address bar displays "http://www.ncbi.nlm.nih.gov/PubMed/". The main heading is "PubMed". Below the heading, a text box contains "MEDLINE" and a search button. A dropdown menu is open, showing options: "GenBank DNA Sequences", "GenBank Protein Sequences", "Biomolecule 3D Structures", and "Complete Genomes". To the left of the search area is a navigation menu with links: "Overview", "Help", "New/Noteworthy", "Clinical Alerts", "Advanced Search", "Clinical Queries", "Journal Browser", "Internet Grateful Med". Below the search area, there are fields for "Number of doc" and "Pub. Date limit". A list of search tips is provided: "Enter one or more search terms.", "Author names should be entered in the form Smith JB, but initials are optional.", and "Journal titles may be entered in full, as valid MEDLINE abbreviations, or as ISSN numbers (see Journal Browser for more information)."

Association of Research Libraries
Statistics for Selected Major Institutions, 1995-96

<u>Institution</u>	<u>Volumes in library</u>	<u>Volumes added</u>	<u>Current serials</u>	<u>Circulations</u>	<u>Inter- library loans</u>	<u>Inter- library borrowings</u>	<u>Number of staff</u>	<u>Expenditures for materials</u>
<i>Minnesota, U. of</i>	5,376,090	134,500	47,867	1,020,273	246,800	15,279	446	\$ 8,789,784
Arizona, U. of	4,343,130	116,822	25,248	1,100,987	30,790	18,141	367	7,284,160
Brown	2,810,163	47,967	13,101	270,299	12,988	15,484	239	4,256,138
California, Berkeley	8,462,123	165,563	83,351	1,267,448	56,195	20,543	656	9,985,658
California, Davis	2,871,796	63,933	46,655	561,987	48,946	15,278	295	6,323,446
California, Los Angeles	6,772,851	156,373	95,610	2,046,640	90,941	17,291	644	9,502,100
California, San Diego	2,469,912	103,893	23,421	570,919	28,131	30,239	329	5,718,491
California, Santa Barbara	2,305,494	57,668	18,825	632,925	20,256	20,751	250	3,391,780
California, Southern	3,344,620	40,682	27,419	806,169	13,894	15,311	359	6,958,495
Chicago, U. of	5,982,101	128,087	40,711	741,261	41,164	21,376	334	7,754,976
Colorado, U. of	2,672,243	48,000	29,517	834,605	32,700	14,177	254	7,564,265
Columbia	6,792,274	127,526	65,275	723,943	32,019	19,756	555	9,630,835
Cornell	5,952,217	116,982	61,673	1,158,379	17,045	13,591	580	9,159,829
Duke	4,534,208	118,683	33,205	482,940	58,656	13,831	328	8,023,516
Harvard	13,369,855	207,466	97,568	1,674,061	71,365	19,563	1,125	15,835,910
Illinois, U. of	8,840,326	174,512	91,094	1,570,471	62,267	53,066	531	7,788,533
Indiana	5,790,384	113,058	41,064	1,536,721	61,005	29,086	474	7,977,911
Iowa, U. of	3,751,596	96,100	38,370	662,375	53,947	19,991	309	6,345,483
Johns Hopkins	3,172,679	53,914	20,390	587,425	23,229	20,714	311	7,655,416
Library of Congress	23,672,004	314,333	150,000	—	19,742	357	4,500	6,792,498
Maryland, U. of	2,539,110	74,487	26,259	766,851	26,173	13,908	316	5,333,350
Michigan State	4,047,477	75,081	27,594	574,029	27,939	14,101	283	5,531,455
Michigan, U. of	6,874,648	100,133	69,566	961,864	61,028	26,399	653	12,572,215

MIT	2,448,647	39,511	17,815	633,078	23,073	8,823	220	3,637,605
New York Public	7,309,690	159,167	167,464	—	3,124	3,722	794	9,538,493
New York U.	3,508,001	122,543	29,687	—	20,768	21,222	470	7,276,221
North Carolina, U. of	4,674,502	117,941	43,571	1,666,180	46,894	9,304	423	8,614,336
Northwestern	3,840,439	64,913	39,033	343,208	26,995	24,132	373	6,471,391
Ohio State	4,977,610	113,088	33,280	1,336,866	62,966	46,745	420	7,900,326
Pennsylvania State	3,724,916	92,264	31,806	1,072,229	39,892	18,239	536	8,045,636
Pennsylvania, U. of	4,437,523	113,298	33,530	543,599	23,293	30,775	379	8,015,076
Pittsburgh, U. of	3,730,778	94,110	25,786	581,459	39,481	14,280	425	7,510,167
Princeton	5,405,087	112,138	33,073	—	17,578	9,639	380	9,782,213
Purdue	2,201,543	34,594	20,542	523,352	26,173	16,231	267	4,883,768
Rutgers	3,567,690	86,770	29,490	841,511	20,007	20,203	451	7,199,786
Stanford	6,746,550	196,825	44,131	1,036,194	20,099	10,745	559	13,587,712
Texas A&M	2,367,072	85,418	22,781	841,171	44,991	31,264	344	6,162,606
Texas, U. of	7,329,663	152,774	51,562	2,367,982	35,194	21,224	599	7,128,615
Toronto, U. of	6,905,360	192,331	39,119	2,455,299	23,608	9,060	579	10,063,511
Virginia, U. of	4,276,435	110,279	47,392	804,027	37,538	27,489	363	7,667,486
Washington U.	3,164,136	68,823	18,601	425,290	39,658	22,826	285	6,348,160
Washington, U. of	5,601,263	129,479	56,295	3,140,516	81,010	10,046	478	9,128,097
Wisconsin, U. of	5,737,834	84,949	44,818	1,084,011	92,856	21,258	543	8,040,673
Yale	9,758,341	148,520	57,377	717,772	15,477	14,341	615	13,353,000

Definitions

Volumes in library: ARL cautions that this number means different things at different libraries.

Volumes added: Volumes in library for '95-'96 minus volumes in library for '94-'95

Circulations: Initial loans, plus renewals

Number of staff: Professional, support, and student staff

Expenditures for materials: i.e., books, serials, and other information available to users

Source: Association of Research Libraries (<http://arl.cni.org/stats/Statistics/arlstat/arlstat.html>)

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

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Please send your new citations to
phil@ortta.umn.edu.

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More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ National Science Foundation Biotic Surveys and Inventories

The National Science Foundation has established the Biotic Surveys and Inventories Program (BS&I). BS&I invites proposals to document diversity of species throughout the world, especially fungi, prokaryotes, protists, and invertebrate animals from all marine, aquatic, and terrestrial habitats. The program supports research to record the species-level diversity of life on earth as a prologue to investigations of patterns and processes and the development of plans for conservation of that diversity. The majority of BS&I awards are for discovery (using traditional and/or molecular techniques), collecting, identifying, classifying, and naming biota of a substantial geographic or oceanographic region.

Typically, between fifteen and twenty awards are made. Most awards range from \$30,000 to \$150,000 per year and are for three years. However, major projects that may involve multiple collaborators and complex logistics may be supported in the form of a series of five-year awards administered as cooperative agreements, rather than grants. Proposers should discuss potential projects with the BS&I program director in advance of application.

The annual application deadline is the first Friday in November of each year, this year **November 7**. Proposals must be submitted electronically using the NSF FastLane system. A complete copy of the announcement (NSF 97-136) is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. Further information may be obtained from the Biotic Surveys and Inventories Program, Division of Environmental Biology, National Science Foundation, 4201 Wilson Boulevard, Room 635, Arlington, VA 22230; 703/306-1480, fax 703/306-0817. The announcement may also be found at <http://www.nsf.gov/pubs/1997/nsf97136/nsf97136.htm>.

■ National Science Foundation Environmental Molecular Science Institutes

The National Science Foundation and the U.S. Department of Energy announce a one-time opportunity for support of Environmental Molecular Science Institutes (EMSI) aimed at increasing fundamental understanding of natural and industrial processes and their interaction at the molecular level. NSF and DOE encourage cohesive, interdisciplinary, university-industry group efforts in basic research on fundamental issues that underpin the amelioration of environmental problems caused by activities such as manufacturing that are energy- and pollution-intensive.

An institute should serve as a national model and resource for excellence in collaborative environmental research and dissemination of results. It must have a focused research theme and specific goals. Examples of appropriate research areas include, but are not limited to chemical and materials synthesis or processing for pollution prevention; integrated understanding of speciation, sorption, transport, and bioavailability in a specified environment; response of a specific environment to chemical perturbations caused by human activities. The proposed research, as an ancillary benefit, should help to integrate research and education and provide broadened experience to students.

One to three institutes will be established. Five year requests in the range of \$0.5 million to \$2 million per year are appropriate. Cost sharing is encouraged but not required.

Preliminary applications are due **October 15, 1997**. They should include a project summary; a three-page project description that outlines goals, research plans, and roles of collaborators; biographical sketches (limited to two pages per investigator); and one budget page for the total funding request.

Full proposals will be invited and are due **February 1, 1998**. A complete copy of the announcement (NSF 97-135) is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. For further information contact Janet G. Osteryoung, Director, Division of Chemistry, NSF, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1845, josteryo@nsf.gov or Robert S. Marianelli, Director, Chemical Sciences Division, Office of Basic Energy Sciences, Office of Energy Research, U.S. Department of Energy, 1901 Germantown Road, Germantown, MD 20874-1290; 301/903-5808, robert.marianelli@mailgw.er.doe.gov.

■ Department of Defense

U.S. Army Medical Research and Materiel Command - Prostate Cancer Research

The U.S. Army Medical Research and Materiel Command has issued a broad solicitation to encourage proposals for prostate cancer research. The program goal is rapid development of new ideas to conquer prostate cancer by pursuing truly innovative clinical research approaches. The solicitation calls for proposals in two categories:

- 1) Idea Development Awards to stimulate and reward speculative but promising and creative ideas with high payoff potential; and
- 2) New Idea Awards, similar to development awards but targeted to investigators in the early phases of independent research careers—generally within six years of postdoctoral, residence, or equivalent training.

The Army's push for novel approaches means it will consider proposals that lack pilot data if they demonstrate solid scientific judgment.

\$38 million is available overall.

Proposals are due **October 29, 1997**. Download the announcement from <http://mrmc-rad6.army.mil/documents.html>; request it by fax, 301/682-5521; or phone 301/682-5517, ext. 101.

■ Department of Defense

U.S. Army Medical Research and Materiel Command - Ovarian Cancer Research

The U.S. Army Medical Research and Materiel Command has issued a broad solicitation to encourage proposals for ovarian cancer research. The goal of the initiative is to promote research directed toward a comprehensive prevention program in ovarian cancer that extends into endometrial, cervical, and other cancer research. The Army is seeking proposals for multidisciplinary research to develop novel ovarian cancer prevention strategies at National Cancer Institute-designed comprehensive cancer centers.

At least three awards of up to \$2 million each will be made for two to four years duration.

The application deadline is **November 12, 1997**. Download the announcement from <http://mrmc-rad6.army.mil/documents.html>; request it by fax, 301/682-5521; or phone 301/682-5517, ext. 101.

■ Department of Defense

U.S. Army Medical Research and Materiel Command - Neurofibromatosis Research

The U.S. Army Medical Research and Materiel Command has issued a broad solicitation to encourage proposals for clinical neurofibromatosis research. The program goal is to fund two multi-institutional natural history studies of tumor growth rates that could be readily translatable into clinical trials. One award will fund a consortium to examine the growth and progression of plexiform neurofibromas in neurofibromatosis-1 patients; a second will fund a consortium to study the growth and progression of vestibular schwannomas in neurofibromatosis-2 patients.

The solicitation will announce funding. Last year's program totaled \$6.4 million. As of this writing, the **deadline had not been established**. For further information contact United Information Systems, Attn: Broad Agency Announcement, 1003 West Seventh Street, Suite 1001, Frederick, MD 21702. Download the announcement from <http://mrmc-rad6.army.mil/documents.html>; or request it by fax, 301/682-5521.

■ James S. McDonnell Foundation Centennial Fellowship Program

The James S. McDonnell Foundation invites applications for the James S. McDonnell Centennial Fellowships. In an international competition, the Foundation will award fellowships supporting junior scholars in five research categories: astrophysics and cosmology, human genetics, global and complex systems, human cognition, and history and philosophy of science. The foundation's intent is to award ten \$1 million dollar fellowships across the five award categories, ideally two fellowships per award category.

The intent of the Centennial Fellowships is to support and encourage exceptional scientists and scholars in the early stages of their careers.

The application deadline is **December 15, 1997**. A complete copy of the announcement and preparation guidelines are available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. The foundation may be contacted at the James S. McDonnell Centennial Fellowship Program, 1034 South Brentwood Boulevard, Suite 1850, St. Louis, MO 63117; 314/721-1532, fax 314/721-7421, centennial@jsmf.org, <http://www.jsmf.org/CFdocu.htm>.

■ U.S. Department of Agriculture Competitive Grants Program

Applications are invited for competitive grant awards in agricultural, forest, and related environmental sciences under the National Research Initiative Competitive Grants Program (NRICGP), U.S. Department of Agriculture. The project types for which proposals are solicited include:

1a) Conventional projects: Fundamental or mission-linked, conducted by individual investigators, co-investigators within the same discipline, or multidisciplinary teams; 1b) Conferences: Scientific meetings that bring together scientists to identify research needs, update information, or advance an area of research. 2) Agricultural Research Enhancement Awards: To contribute to the enhancement of research capabilities in the research program areas described below. May be undertaken as a Postdoctoral Fellowship or a New Investigator Award.

Program areas are:

22.1	Plant Responses to the Environment	November 15
25.0	Soils and Soil Biology	November 15
26.0	Water Resources Assessment and Protection	November 15
31.0	Human Nutrition for Optimal Health	November 15
51.4	Weed Biology and Management	November 15
52.1	Plant Genome	December 15
52.2	Plant Genetic Mechanisms	December 15
53.0	Plant Growth and Development	December 15
54.1	Photosynthesis and Respiration	December 15
61.0	Markets and Trade	December 15
62.0	Rural Development	December 15
71.1	Food Characterization/Process/Product Research	December 15
71.2	Non-Food Characterization/Process/Product Research	December 15
32.0	Ensuring Food Safety	January 15
41.0	Animal Reproductive Efficiency	January 15
44.0	Animal Health and Well-Being	January 15
51.1	Plant Pathology	January 15
51.2	Entomology and Nematology	January 15
51.7	Biologically Based Pest Management	January 15
73.0	Improved Utilization of Wood and Wood Fiber	January 15
42.0	Animal Growth, Development, and Nutrient Utilization	February 15
43.0	Animal Genetic Mechanisms and Gene Mapping	February 15
54.2	Nitrogen Fixation/Nitrogen Metabolism	February 15
80.1	Research Career Enhancement Awards	February 15
80.2	Equipment Grants	February 15
80.3	Seed Grants	February 15
100.0	Agricultural Systems	February 15

For further information contact U.S. Department of Agriculture, Cooperative State Research, Education, and Extension Service, National Research Initiative Competitive Grants Program, Stop 2241, 1400 Independence Avenue SW, Washington, DC 20250-2241; 101/401-5022, nricgp@reeusda.gov; <http://www.reeusda.gov/nri/>.

■ United States Information Agency Training Programs in Selected Countries

The Office of Citizen Exchanges of the United States Information Agency announces an open competition. Organizations may apply to develop projects that link their international exchange interests in Western Europe with counterpart institutions/groups. Exchange and training programs should operate at two levels: 1) they should enhance institutional relationships, and 2) they should offer practical and comparative information to individuals to assist them with their professional responsibilities. Proposals for countries and themes other than the ones described below *will not* be eligible for consideration.

CANADA: Projects should focus on a U.S.-Canada parliamentary staff exchange program.

GERMANY: Projects should focus on a parliamentary exchange program for U.S. and German state legislators.

GREECE: Projects should focus on the practices and ethics of journalism.

ITALY: Projects should focus on judicial reform.

TURKEY: Projects should focus on local government administration in both eastern and western Turkey.

UNITED KINGDOM: Projects should focus on student political activists.

Proposals for less than \$75,000 will receive preference and those with strong cost-sharing will be given priority.

The application deadline is **October 31, 1997**. The solicitation may be downloaded from <http://www.usia.gov/education/rfps>. Potential applicants should read the complete solicitation before sending inquiries or submitting a proposal. A complete copy is also available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu.

Library of Congress National Digital Library Program

The Library of Congress, with a gift from Ameritech, is sponsoring a competition to enable U.S. public, research, and academic libraries, museums, historical societies, and archival institutions (excepting federal institutions) to create digital collections of primary resources for distribution on the Internet.

In the 1997-98 competition, applications will be limited to collections of textual and graphic materials that illuminate the period 1763-1920 and that complement and enhance the American Memory collections already mounted in the National Digital Library. In the final selection, principal criteria will be 1) the significance of the collection's content for understanding United States history and culture, as well as its breadth of interest and utility to students and the general public, 2) the availability and usability of aids to intellectual access that can be integrated into the American Memory resource, and 3) the technical and administrative viability of the project's plan of work in relation to the scope of the project.

Awards will be made of up to \$75,000 to individual institutions and up to \$150,000 to eligible consortia for projects that can be accomplished in twelve to eighteen months. Only costs directly associated with digital conversion may be included; no equipment may be purchased with award funds.

The application deadline is **November 3, 1997**. For further information contact Bonnie Magness-Gardiner, 202/707-1087, fax 202/252-3249, lc_ameritech@loc.gov. Detailed guidelines and application instructions may also be obtained from <http://lcweb2.loc.gov/ammem/award/>.

Health Resources and Services Administration Competitive Grants Preview

The second edition of the HRSA Competitive Grants Preview has been published to accommodate HRSA programs which anticipate making grant awards during the first quarter of fiscal year 1998. Another comprehensive preview for the entire year will be published in October.

A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. Individuals may also obtain the preview by calling HRSA at 1/888-333-4772, or it may be accessed through the web at <http://www.hrsa.dhhs.gov/>

Department of State U.S.-Egypt Science and Technology

The U.S. Department of State announces a program for grants to support international, collaborative projects in science and technology between the United States and the government of the Arab Republic of Egypt. The program will provide modest grants for collaborative projects submitted by U.S. and Egyptian experts. Projects must help both countries utilize science and apply technology by providing opportunities to exchange ideas, information, skills, and technologies, and to collaborate on scientific and technological endeavors of mutual interest.

The application deadline is **December 1, 1997**. For further information contact George Bevan, Program Administrator, U.S.-Egypt Science and Technology Grants Program, U.S. Embassy, Cairo/ECON, Unit 64900, Box 6, APO AE 09839-4900; phone 011-(20-2) 355-2925; fax 011-(20-2) 357-3150, bevangw@cairowpoa.us-state.gov.

U.S. Department of Education Grant Programs and Fellowship Programs

The U.S. Department of Education invites applications for new awards for FY98 under a number of the department's direct grant and fellowship programs.

84.016A: Undergraduate International Studies and Foreign Language Program. To strengthen and improve undergraduate instruction in international studies and foreign languages in the U.S. Contact Christine Corey, 202/401-9798. Deadline: **November 3, 1997**

84.017A: International Research and Studies Program. To conduct research and studies to improve and strengthen instruction in modern foreign languages, area studies, and other international fields to provide full understanding of the places in which the foreign languages are commonly used. Contact Jose L. Martinez, 202/401-9784. Deadline: **October 31, 1997**.

84.019A: Fulbright-Hays Faculty Research Abroad Program. Offers opportunities to faculty members of higher education for research and study in modern foreign languages and area studies. Contact Eliza Washington, 202/401-9777. Deadline: **October 27, 1997**

84.021A: Fulbright-Hays Group Projects Abroad Program. To support overseas projects in training, research, and curriculum development in modern foreign languages and area studies by teachers, students, and faculty engaged in a common endeavor. Contact Dr. Lungching Chiao, 202/401-9772. Deadline: **October 20, 1997**.

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84.022A: Fulbright-Hays Doctoral Dissertation Research Abroad Program. Provides graduate students opportunities to engage in full-time dissertation research abroad in modern foreign languages and area studies. Contact Karla Ver Bryck Block, 202/401-9774. Deadline: **October 17, 1997.**

84.153A: Business and International Education Program. To enhance international business education programs and expand the capacity of the business community to engage in international economic activities. Contact Sarah T. Beaton, 202/401-9798. Deadline: **November 7, 1997.**

84.220A: Centers for International Business Education Program. To pay the federal share of the cost of planning, establishing, and operating centers for international business. Contact Susanna C. Easton, 202/708-4804. Deadline: **November 10, 1997.**

84.120A: Minority Science Improvement Program. To effect long-range improvement in science education at predominantly minority institutions and to increase the flow of under-represented ethnic minorities, particularly women, into scientific careers. Contact Dr. Argelia Velez-Rodriguez 202/260-3261, fax requests for applications 202/260-7615. Deadline: **December 11, 1997.**

The street address for above contact personnel is U.S. Department of Education, 600 Independence Avenue SW, Washington, DC 20202-5332. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. Information about DE's funding opportunities, including copies of application notices for discretionary grant competitions, can be accessed at <http://gcs.ed.gov/>.

■ U.S. Department of Education Talent Search Programs Educational Opportunity Centers Programs

The U.S. Department of Education is inviting applications for new awards for FY 1998 for the Talent Search Program and the Educational Opportunity Centers Programs.

84.044: Talent Search Program. The purpose is to provide grants to enable applicants to conduct projects designed to 1) identify qualified youth who are low-income and potential first-generation college students and to encourage them to complete high school and enroll in post secondary education; 2) publicize the availability of student financial assistance at the postsecondary level; and 3) encourage per-

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sons who have not completed secondary or postsecondary education to re-enter these programs.

The application deadline is **October 31, 1997.** It is estimated that 347 awards will be made ranging from \$190,000 to \$400,000 and averaging \$273,000 for up to five years. For application information contact Clinton Black, Federal TRIO Programs, U.S. Department of Education, 600 Independence Avenue SW, The Portals Building, Suite 600D, Washington, DC 20202-5249; 202/708-4804, trio@ed.gov or clinton_black@ed.gov.

84.066: Educational Opportunity Centers Program. The purpose of this program is to award grants to 1) provide information regarding financial and academic assistance available for individuals who desire to pursue a program of postsecondary education, and 2) assist individuals applying for admission to institutions that offer programs of postsecondary education.

The application deadline is **September 30, 1997.** It is estimated that 81 awards will be made ranging from \$190,000 to \$450,000 and averaging \$357,000 for up to five years. For application information contact Margaret A. Wingfield Federal TRIO Programs, U.S. Department of Education, 600 Independence Avenue SW, The Portals Building, Suite 600D, Washington, DC 20202-5249; 202/708-4804, trio@ed.gov or margaret_wingfield@ed.gov.

■ State of Minnesota Higher Education Services Office

The 1997-98 Request for Proposals (RFP) for the higher education Eisenhower Professional Development Program is now available. These competitively awarded grants provide sustained and intensive high-quality professional development for elementary and secondary teachers in mathematics and science and the other core academic subjects, or improvements to mathematics and science teacher education programs.

\$730,000 will be available for funding. Funded projects must be conducted between January 8, 1998, and June 30, 1999. Technical assistance sessions will be offered at six sites throughout the state during September.

The application deadline is **November 19, 1997.** Questions about the program may be directed to Dr. Nancy B. Walters, Program Manager, walters@heso.state.mn.us; 612/296-9777 or 1/800/657-3866. The RFP may be downloaded from <http://www.heso.state.mn.us/www/federal/fedprog.htm>. Mailed copies of the RFP must be requested by using a specific form (call Therese at ORTTA, 4-7021 or send a request 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 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 1997	268	\$ 54,088,503
Awards Processed		
July 1997	236	25,977,370
Proposals Submitted		
July 1996	292	45,666,363
Awards Processed		
July 1996	362	34,004,615

Methane Monooxygenase Structure and Mechanism

John D. Lipscomb, Biochemistry, Medical School
 NIH, NIGMS
 \$264,774 - 7/1/97-6/30/98

Interactive Laboratory Studies for the Myeloma ECOG Phase II

Brian Van Ness, Biochemistry, Medical School
 Eastern Cooperative Oncology Group (ECOG)
 \$34,549 - 5/1/97-4/30/98

Multicenter, Double-Blind, Placebo-Controlled, Parallel Study to Determine the LDL-C Lowering Efficacy of Pravastatin

Donald B. Hunninghake, Pharmacology
 Nina M. Diangelis, Medicine
 Bristol-Myers Squibb Pharmaceutical Research Institute
 \$34,140 - 2/4/97-11/30/97

Swine Isolated Working Heart

Paul A. Iaizzo, Anesthesiology
 Andrew J. Houlton, Anesthesiology
 Medtronic, Inc.
 \$38,661 - 3/1/97-2/28/98

Effect of Finasteride on Hair Loss in Men with Male Pattern Hair Loss (Androgenetic Alopecia)

Maria K. Hordinsky, Dermatology
 Merck
 \$68,078 - 1/1/97-6/30/98

Photodynamic Therapy of Basal Cell Carcinoma Using Oral Delta-Aminolevulinic Acid

Whitney Tope, Dermatology
 Dermatology Foundation
 \$10,000 - 7/1/97-6/30/98

T Cell Repertoire Selection

Kristin A. Hogquist, Laboratory Medicine and Pathology
 Searle
 \$180,000 - 7/1/97-6/30/00

Integrin Affinity and T Cell Activation

Melody L. Woods, Laboratory Medicine and Pathology
 Yoji Shimizu, Laboratory Medicine and Pathology
 Leukemia Research Foundation
 \$23,000 - 7/1/97-6/30/98

A Study of Integrin Receptor Expression in Diabetic Nephropathy

Suman Setty, Laboratory Medicine and Pathology
 Photini-E. C. Tsilibary, Laboratory Medicine and Pathology
 National Kidney Foundation of the Upper Midwest, Inc.
 \$2,852 - 1/1/97-12/31/97

Regulation of Survival During B Cell Development of bcl-x

Timothy W. Behrens, Medicine
 Leukemia Society of America, Inc.
 \$270,000 - 7/1/97-6/30/02

Clinical Trial Agreement — Protocol 107

Spencer Kubo, Medicine
 Novartis Pharmaceuticals Corporation
 \$182,280 - 2/17/97-1/15/00

Role of Aldosterone in Progressive Renal Injury

Hassan N. Ibrahim, Medicine
 Thomas Hostetter, Medicine
 National Kidney Foundation, Inc.
 \$50,000 - 7/1/97-6/30/99

Efficacy of Atrial Infusion of Pharmaceutical Agents in the Termination of Paroxysmal AF in Chronic Goal Model

Gerard Fahy, Medicine
 Pharmatarget Inc.
 \$49,791 - 2/24/97-10/31/97

Phase I/II Clinical Trial of GM-CSF Vaccine Therapy for Patients with Glioblastoma Multiforme

Walter Low, Neurosurgery
 Walter A. Hall, Neurosurgery
 Margaret Wallenfriedman, Neurosurgery
 Immunex Corp.
 \$25,000 - 3/14/97-12/31/97

Cystic Fibrosis Center Program Accreditation and Funding

Warren J. Warwick, Pediatrics
 Cystic Fibrosis Foundation
 \$124,987 - 7/1/97-6/30/98

Pediatric Scientist Development Program - Training Support

Margaret Hostetter, Pediatrics
 March of Dimes Birth Defect Foundation
 \$94,672 - 7/1/97-6/30/98

Pediatric Scientist Development Program

Margaret Hostetter, Pediatrics
 American Academy of Pediatrics
 \$63,346 - 7/1/97-6/30/98

Pediatric Scientist Development Program - Training Support

Margaret Hostetter, Pediatrics
 American Pediatric Society
 \$30,000 - 7/1/97-6/30/98

Serum Pneumococcal Antibody Analysis for Types 1, 3, 5, 7F, and 15

G. Scott Giebink, Pediatrics
 Merck
 \$7,359 - 1/15/97-6/30/97

Measurement of Nasal Potential Difference in Cystic Fibrosis

Warren E. Regelman, Pediatrics
 O. Douglas Wangenstein, Physiology
 Minnesota Medical Foundation
 \$4,500 - 6/1/97-5/30/98

Major Depressive Disorder: Early Biological Risk Factors

Susan L. Warren, Psychiatry
 National Alliance for Research on Schizophrenia and Depression
 \$60,000 - 7/1/97-6/30/99

Pilot Study of Remeron in Depressed Patients Greater than 70 Years of Age

David Adson, Psychiatry
Paula J. Clayton, Psychiatry
Suck Won Kim, Psychiatry

Organon Pharmaceuticals, Inc.
\$30,000 - 2/1/97-1/31/98

Impact of People and Structural Factors on System Integration

Thomas Choi, Health Services Research

Franciscan Skemp Healthcare
\$12,000 - 4/1/97-9/30/97

Minnesota Partnerships for Training

Christine Heine, Nursing

Robert Wood Johnson Foundation
\$1,300,000 - 1/1/97-12/31/02

Mucosal Colonization of Pigs by *Streptococcus suis*

Carlos Pijoan, Clinical and Population Sciences
Mon Torremorrell, Clinical and Population Sciences

National Pork Producers Council
\$17,913 - 7/1/97-6/30/98

Simulation on Nonequilibrium Aerothermochemistry

Graham V. Candler, Aerospace Engineering and Mechanics

USDoD, Army
\$66,864 - 6/1/97-12/31/97

Numerical Simulation of Atmospheric Pressure Air Plasmas

Graham V. Candler, Aerospace Engineering and Mechanics

Stanford University
\$61,181 - 5/1/97-11/30/97

Effect of Swirl on Turbulent Structures in Supersonic Jets

Thomas S. Lundgren, Aerospace Engineering and Mechanics
National Aeronautics and Space Administration
\$22,416 - 6/1/97-12/31/97

Turbulent Convection and Dynamis in Stars

Paul R. Woodward, Astronomy
David Porter, Astronomy

University of Chicago
\$537,000 - 8/26/96-8/26/99

Infrared Imaging, Spectroscopic, and Photometric Studies of Bright Comets

Robert D. Gehrz, Astronomy
Terry J. Jones, Astronomy
Edward P. Ney, Astronomy

National Aeronautics and Space Administration
\$27,500 - 7/1/97-6/30/98

High-Resolution Imaging of the Massive Overcontact Binary RY-Scuti

Robert D. Gehrz, Astronomy

Space Telescope Science Institute
\$13,115 - 6/1/97-5/31/99

Self-Assessment of Hepatocyte Spheroids in Microgravity

Wej-Shou Hu, Chemical Engineering and Materials Science
Rory P. Remmel, Medicinal Chemistry
Linda K. Hansen, Laboratory Medicine and Pathology

National Aeronautics and Space Administration
\$89,000 - 6/19/97-11/30/97

Thermodynamics of Polyolefin Mixtures

Frank S. Bates, Chemical Engineering and Materials Science
Lockheed Martin Energy Systems, Inc.
\$72,000 - 6/16/97-6/15/98

A Geometric Investigation of Layered Manufacturing: Algorithms, Software, and Fabrication

Ravi Janardan, Computer Science and Engineering
National Science Foundation
\$189,944 - 08/15/97-07/31/00

Macroscopic Spreading of Contaminants in 3D Groundwater Flow

Randal J. Barnes, Civil Engineering

Kiwa Research and Consulting
\$33,000 - 6/30/97-10/15/97

Internet Integrated Services Over ATM Network

David H. Du, Computer Science and Engineering

Sandia National Laboratories
\$11,298 - 6/15/97-9/15/97

Fabrication of Anamorphic Microlenses by Mass Transport

James R. Leger, Electrical Engineering

Cynosure, Inc.
\$190,234 - 4/11/97-4/10/99

Investigating a Practical Self-Test Scheme

Bapiraju Vinnakota, Electrical Engineering

Cardiac Pacemakers Inc.
\$57,500 - 7/1/97-6/30/98

Direct Observation of the Mechanics of Friction at a Single Asperity on Mineral Surfaces

David Kohlstedt, Geology and Geophysics

National Science Foundation
\$69,668 - 7/1/97-12/31/98

Effect of Hydrogen on the Electrical Conductivity of Olivine

Barbara J. Wanamaker, Geology and Geophysics

National Science Foundation
\$55,857 - 7/1/97-6/30/98

Stochastic Processes with Applications to Ecology and Theoretical Population Genetics

Claudia Neuhauser, Mathematics

National Science Foundation
\$88,758 - 6/15/97-5/31/00

Particle Nucleation and Growth During Chemical Vapor Deposition

Peter H. McMurry, Mechanical Engineering
Steven L. Girshick, Mechanical Engineering
Stephen A. Campbell, Electrical Engineering

Advanced Silicon Materials, Inc.
\$242,699 - 8/1/97-2/1/99

Controlling Flame Characteristics in a Dynamic Containment Combustion Using Countercurrent Shear

Paul J. Strykowski, Mechanical Engineering
David L. Hofeldt, Mechanical Engineering

USDoD, Navy
\$113,563 - 7/1/97-6/30/00

Development of In-line and In-situ Analytical Systems

Joachim V. Heberlein, Mechanical Engineering

Geo-Centers, Inc.
\$38,994 - 6/1/97-12/11/97

Experimental Investigations of Thin Free-Standing Liquid Crystals

Cheng-Che Huang, Physics and Astronomy

National Science Foundation
\$111,560 - 7/1/97-6/30/98

A Three-Dimensional, Time-Dependent Model of the Interaction of Alfvén Waves with the Ionosphere

Robert Lysak, Physics and Astronomy

National Aeronautics and Space Administration
\$70,942 - 5/1/97-4/30/98

Engineering and Design of Liquid Scintillator Detector

Keith Ruddick, Physics and Astronomy

Fermi National Accelerator Laboratory
\$30,000 - 4/23/97-9/30/97

Community Composition and Biomass Distribution
 Shahid Naeem, Ecology, Evolution, and Behavior
 National Science Foundation
 \$100,000 - 7/15/97-6/30/99

Host Movement and Disease Dynamics
 Donald N. Alstad, Ecology, Evolution, and Behavior
 Sonia M. Altizer, Ecology, Evolution, and Behavior
 Karen Oberhauser, Ecology, Evolution, and Behavior
 National Science Foundation
 \$7,500 - 7/1/97-6/30/98

Mutation in Hybrids of *Drosophila*
 Michael J. Simmons, Genetics and Cell Biology
 NIH, NIGMS
 \$220,693 - 7/1/97-6/30/98

Use of *Saccharomyces cerevisiae* to Study Molecular Mechanisms of *Candida albicans* Pathogenicity
 Judith G. Berman, Plant Biology
 Burroughs Wellcome Fund
 \$400,000 - 7/1/97-6/30/00

Topics in Empirical Macroeconomics
 Lee Ohanian, Economics
 National Science Foundation
 \$108,084 - 7/1/97-6/30/99

Taiwan Population Distribution
 Mei-Ling Hsu, Geography
 Chiang Ching-Kuo Foundation for International Scholarly Exchanges
 \$4,800 - 7/1/97-6/30/98

Neurobehavioral Aspects of Personality
 William G. Iacono, Psychology
 NIH, NIMH
 \$79,951 - 7/1/97-6/30/98

Foundation of Regression Graphics
 R. Dennis Cook, Statistics
 National Science Foundation
 \$120,000 - 7/15/97-6/30/00

Does Alteration in Cytokinin Metabolism Affect Maize Kernel
 Robert J. Jones, Agronomy and Plant Genetics
 Pioneer Hi-bred International Inc.
 \$125,400 - 5/30/97-4/30/99

Role of Insulin-like Growth Factor Binding Protein-3 in Regulating Growth of Porcine Skeletal Muscle
 William R. Dayton, Animal Science
 Marcia R. Hathaway, Animal Science
 Michael E. White, Animal Science
 National Pork Producers Council
 \$18,000 - 7/1/97-6/30/98

Investigation of Mesoscale Variability in Convective Boundary Layer Using Lidar Atmospheric Sensing Experiment (LASE)
 Kenneth J. Davis, Soil, Water, and Climate
 National Aeronautics and Space Administration
 \$53,639 - 6/1/97-5/31/99

Affect of Elevated CO₂ on Soil Microorganisms
 Michael J. Sadowsky, Soil, Water, and Climate
 University of California - Davis
 \$24,000 - 5/1/97-4/30/99

Interpreting Traces from Lossy Time Domain Reflectometry (TDR) System and Optimizing System Performance
 Clive Reece, Soil, Water, and Climate
 John M. Baker, Soil, Water, and Climate
 William A. Breiter, Soil, Water, and Climate
 St. of Minn., Department of Transportation
 \$7,979 - 7/1/97-2/28/98

Dads Make a Difference
 Gary Greenfield, Minnesota Extension Service
 St. of Minn., Department of Human Services
 \$240,000 - 7/1/97-6/30/99

Institutional National Research Service Award: Child Development
 W. A. Collins, Child Development
 NIH, NIMH
 \$74,648 - 7/1/97-6/30/98

Plasticity in Behavioral and Brain Development
 Charles A. Nelson, Child Development
 John D. and Catherine T. MacArthur Foundation
 \$50,000 - 6/1/97-5/30/98

Minneapolis and St. Paul Area - To Achieve Math Standards
 Thomas R. Post, Curriculum and Instruction
 National Science Foundation
 \$1,019,726 - 4/1/97-3/31/98

Statistical Analyses of TIMSS Data
 Frances Lawrenz, Curriculum and Instruction
 Douglas Huffman, Curriculum and Instruction
 Sci Math Mn
 \$7,875 - 3/20/97-9/30/97

Full- and Half-Height Stair Climbing in Adults
 Allen Burton, Kinesiology and Leisure Studies
 Protector Care, Inc.
 \$4,950 - 6/1/97-12/15/97

Intestinal Contents Viscosity of Rats Meal-Fed Oat Fractions
 Daniel D. Gallaher, Food Science and Nutrition, CHE
 Craig A. Hassel, Food Science and Nutrition, CHE
 Quaker Oats Co.
 \$21,600 - 6/1/97-12/31/97

Preacademic Program for Hubert H. Humphrey Fellows
 Kathryn Thomas, International Studies
 Barbara Kappler, International Education,
 Institute of International Education
 \$13,582 - 5/1/97-11/30/97

1997 Minnesota T² Program
 Gerard J. McCullough, Center for Transportation Studies
 Robert Johns, Civil Engineering
 Cheri Trenda, Center for Transportation Studies,
 St. of Minn., Department of Transportation
 \$368,500 - 1/1/97-3/31/98

Women Entrepreneurs Telecommunications and Technology Network
 Jerry Nagel, Management, Duluth
 Kathy Twite, Chancellor's Office, Duluth
 Sue Brorson, Chancellor's Office, Duluth
 Northwest Minnesota Foundation
 \$30,000 - 7/1/97-6/30/98

Correction
Control of Cell Motility by Second Messengers and Expression
 Paul J. Sammak, Pharmacology
 March of Dimes Birth Defects Foundation
 \$68,929 - 06/01/97-05/31/98

Fax number	612/624-4843		
ORTTA's Web site	http://www.ortta.umn.edu		
	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
USDI (non-IT), St. of Minn., DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	Ed Welsch	624-5571	edward@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed., MnDOT	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	Andy Swope	625-1359	andy@ortta.umn.edu
NSF (non-IT)	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, IAFHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	Doyle Smith	626-9741	doyle@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

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ORTTA cannot change the faculty mailing list.

It is generated by the Staff Demographics office.

For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

For changes regarding other labels, please complete the following:

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RESEARCH REVIEW

Office of Research and Technology Transfer

October 1997

In the Competition for Clinical Trials, Time is Money

Conference Speakers Describe U's Weaknesses, Improvements, in the Competition for Commercially Funded Clinical Trials

The pharmaceutical industry's spending on R&D has increased, by the most conservative measure, 500 percent over the past 10 years; roughly a third of that spending is for clinical trials; and of facilities doing clinical trials, the top 25 do *not* include the University of Minnesota. That's according to business consultant Dave Zimmerman.

Why is the University of Minnesota not doing a larger share of clinical trials? Quite simply, according to Leo Furcht and Alan Hirsch of the Medical School, because the U is slow. Finding investigators and subjects, reviewing protocols and conflicts of interest, approving budgets, and negotiating contracts takes too long here, they told an audience of 200 or more in mid-September. And delays, explained Zimmerman, can cost sponsors a million dollars a day in lost sales.

Zimmerman, Furcht, and Hirsch were the first of six main speakers at a Sept. 15 conference titled "Clinical Trials Research: Enhancing the University's Competitive Position." It was a half-day meeting at the Radisson Metrodome, sponsored by the University's new Private Sector Research Service Office (PSRSO).

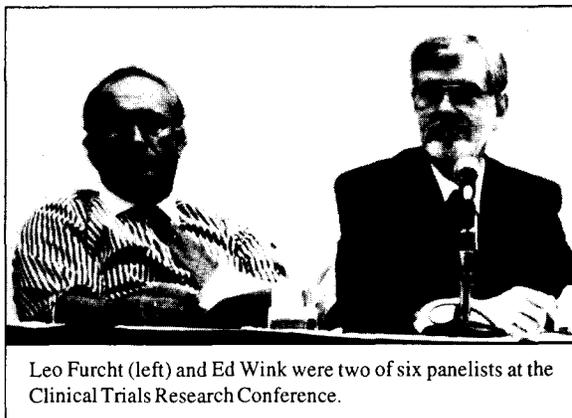
Zimmerman heads a consulting company, Customized Improvement Strategies; Furcht heads the University's Department of Laboratory Medicine and Pathology; and Hirsch directs the Vascular Medicine Program. The other three speakers were David Brown, director of the General Clinical Research Center; Moira Keane, director of Re-

search Subjects' Protection Programs; and Ed Wink, interim associate vice president for research and leader of ORTTA.

They spent the morning describing what the pharmaceutical industry needs from clinical research organizations, and why and how the University of Minnesota might compete for more of the clinical research sponsored by that industry.

By every account, what that industry needs is administrative speed. Organizations that can plan, review, and approve trials, and start enrolling subjects the quickest are the organizations that will do clinical research for corporate sponsors.

{ continued on page 7 }



Leo Furcht (left) and Ed Wink were two of six panelists at the Clinical Trials Research Conference.

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Doyle Smith, 612/626-9741, or Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 4

October 1997

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.



Remote Underwater Sensing Station

Assistant scientist Chris Owen (left) and research associate Richard Axler, both of the UM Natural Resources Research Institute in Duluth, demonstrated the Remote Underwater Sensing Station (RUSS) recently in a metro-area lake.

The floating robot provides water quality data via cellular phone. Solar powered, remote controlled, able to sample down to 90-foot depths, and happy to work all day, year-round, RUSS promises to save countless hours and untold energy now spent to retrieve water samples by hand.

The RUSS was invented by UMD chemist Robert Carlson, Alan W. Cibuzar of A.W. Research Laboratories, Brainerd, with help from Owen. The Blandin Foundation's Sota Tec Fund provided \$400,000 to help them bring it to commercial production.

The National Science Foundation has bought four of the robots from Apprise Technologies, a start-up company led by Owen, Carlson, and Cibuzar. NSF will install the devices in Minnesota lakes and provide their services to schools—K-12, community colleges, and technical schools—for teaching chemistry, physics, biology, math, and statistics.

Grant Management Project

Prepare NSF Applications and UM Proposal Routing Forms (BA23s) With EGMS

NSF Forms

The ability to prepare the NSF grant proposal form (98-2, which replaces 95-27) for new and renewal proposals is now available in the Electronic Grant Management System (EGMS). With this additional capability, we hope that faculty considering submissions to NSF will give EGMS a try. We have tested it administratively. Now the EGMS development team needs comments directly from users regarding how it works.

Proposal Routing Form (BA23)

Central administration has decided that EGMS will be the way to get the proposal routing form (BA23). University Stores will not restock the four-part NCR forms when the current supply is depleted (see page 5). Staff can go to the EGMS web site—<http://egms.ortta.umn.edu/>—complete the form on the web, then print it out and take it to the individuals who need to sign it—principal investigators, department heads, and deans. One can also print a blank form to be filled in the way four-part NCR forms are today.

Electronic routing of the BA23 is a little more complicated because department and deans' offices must set up a routing process. Departments interested in this should contact Susan Stensland or Winifred Schumi at stensland@ortta.umn.edu or wschumi@ortta.umn.edu. We will work with departments and coordinate with deans' offices to facilitate this effort. If a proposal is prepared using the proposal development tools in EGMS, data can flow to the BA23 form. In order to accomplish the electronic routing, however, departments must be set up as described above.

October 1 NIH Deadline

EGMS has now been used to prepare new NIH proposals and generate corresponding BA23s for the October 1 deadline. Principal investigators and their staff who have used this system have been very pleasantly surprised with how user-friendly and flexible this system is, as well as with the potential for time-saving. The EGMS development team is very encouraged by the positive feedback and support they have been receiving from the faculty and staff who have tried EGMS.

Coming Next

Development of generic budget and proposal information is well underway, as are the forms for NIH noncompeting continuations and program project grants. Additional departments are beginning to use the system. Training materials are under development, particularly on-line help screens, so that with a brief orientation you can begin to prepare your proposals electronically.

Remember, all you need to access the proposal development tools in EGMS are your X.500 user name and password. If you don't know your x.500 user name, you can find it on the student/staff directory lookup site, <http://umn.edu/lookup>. If you can't remember your password, call 612/626-4276 and they will provide you with a new password to get you started.

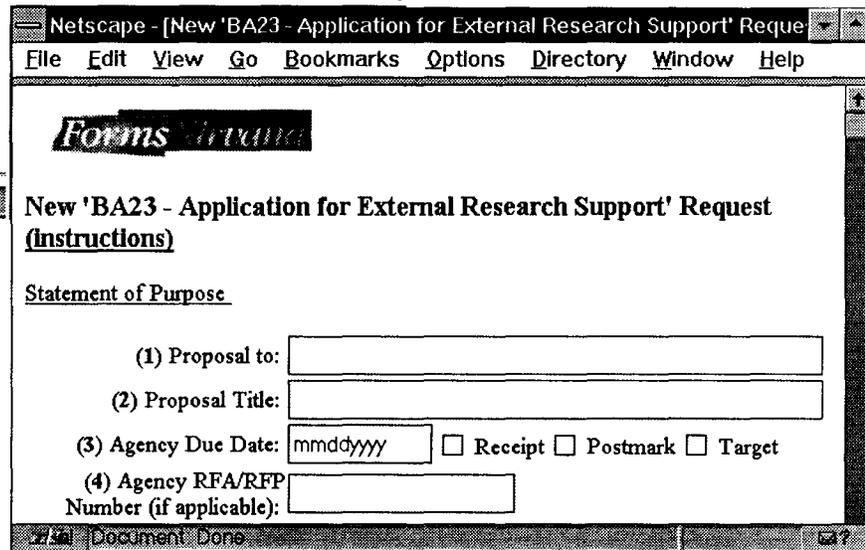
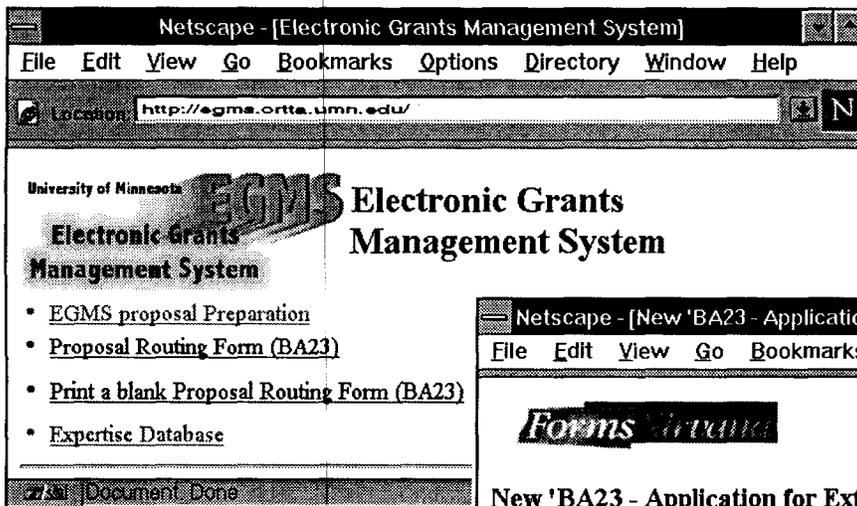
by Winifred Schumi and Susan Stensland, ORTTA

Call for Papers in History and Philosophy of Biology and Biomedicine

Studies in History and Philosophy of Biological and Biomedical Sciences will publish its first issue in early 1998. It seeks articles and essay-reviews in historical, sociological, philosophical, and ethical aspects of the life and environmental sciences, the sciences of mind and behavior, and medical and biomedical sciences and technologies.

The editors will favor work of interest to scientists and medical professionals as well as historians, philosophers, and sociologists. All articles and essays will be blind refereed.

Contact Marina Frasca-Spada, associate editor, History and Philosophy of Science, University of Cambridge, U.K., mfs10@cam.ac.uk.



Get Proposal Routing Forms (BA23s) On-Line, Not on Paper

A revised proposal routing form (BA23) is available via the Electronic Grants Management System (EGMS) at <http://egms.ortta.umn.edu/>. The four-copy, self-carbon paper form now in use will not be restocked when University Stores uses up its current supply.

From the EGMS home page users can fill out a BA23 on-line, then print it on paper for submission with a proposal, or users can print a blank form on paper and then fill it out. Please do not print a supply of BA23 forms for later use; they may well be obsolete by the time you use them.

The revised proposal routing form includes a number of changes from the current paper version, dated May 1994. In particular, it includes new language regarding program income, conflicts of interest, and the University's code of conduct.

<http://egms.ortta.umn.edu/>

Sponsored Projects Administration

Frequently Asked Questions About Sponsored Projects

Question: If sponsor approval is required to carry forward unexpended balances, when is the appropriate time to write a letter of request? We get different answers from SPA.

Answer: A few sponsors set fixed dates when such requests must be submitted, and these deadlines will be clearly stated in the Notice of Grant Award (NOGA). However, most sponsors don't fix the date and they process requests in many different ways. Federal sponsors may even exhibit different preferences within the same agency. That's why it's not unusual to get different responses from different grant administrators. All hope is not lost, however. There is an answer, though it's not as straightforward as we might like.

Because of these differences, *when* the sponsor receives a request isn't the issue (unless there is a deadline, or we're asking really late, like near the end of the final period of the grant, which really annoys sponsors). *The best time to write is when the principal investigator determines that reverting funds will be needed in a subsequent budget period.* That could be before the budget period ends, when a balance is anticipated; or it could be when the financial report is done and the actual balance is known. However, most NIH institutes will consider such request as "for-your-information" and expect to receive a "confirmation" request, along with a copy of the financial report for the year in which the balance exists.

Sponsors may take anywhere from 30 to 45 days to consider a request, and in the case of an estimated balance, they may defer action, or give tentative approval until the actual balance is available. Keep that in mind when planning a request so you can still operate while the request is being considered. The key to success in requesting a carry-forward is to provide complete information: 1) an explanation of why the balance exists, 2) why the carry-forward funds are needed to accomplish project objectives, and 3) a simple budget showing how the funds will be used.

Question: Is there a limit to how much can be carried forward, or a threshold under which we can automatically carry forward the balance?

Answer: Again, this varies by sponsor so there isn't one answer. Federal grants awarded under "expanded authorities" allow the entire balance to be carried

forward; however, we have to explain balances over a certain amount set by the agency, e.g., NSF specifies 20 percent of the prior year's balance, NIH says 25 percent or \$250,000, whichever is less. (Unfortunately for people with NIH grants, we currently don't have that option.)

There are two or three nongovernmental sponsors that do allow automatic carry-forward if the balance is under a set dollar amount—less than \$100 or \$1,000. Check your NOGA or contact the grant administrator for your particular grant to see if this is a condition of your grant.

Question: Is there a dollar threshold under which the University or investigator can keep funds remaining on a cost-reimbursable award?

Answer: No. By definition, a cost-reimbursable award is one in which the University can only be reimbursed for *actual costs incurred*. Actually, the balance that appears on financial statements and in CUFS is "budget"—your authorized spending limit. It doesn't represent cash. We don't receive the cash from the sponsor until we send an invoice and receive payment. So, on a cost-reimbursable award it may look like there is a balance when there aren't any funds to retain.

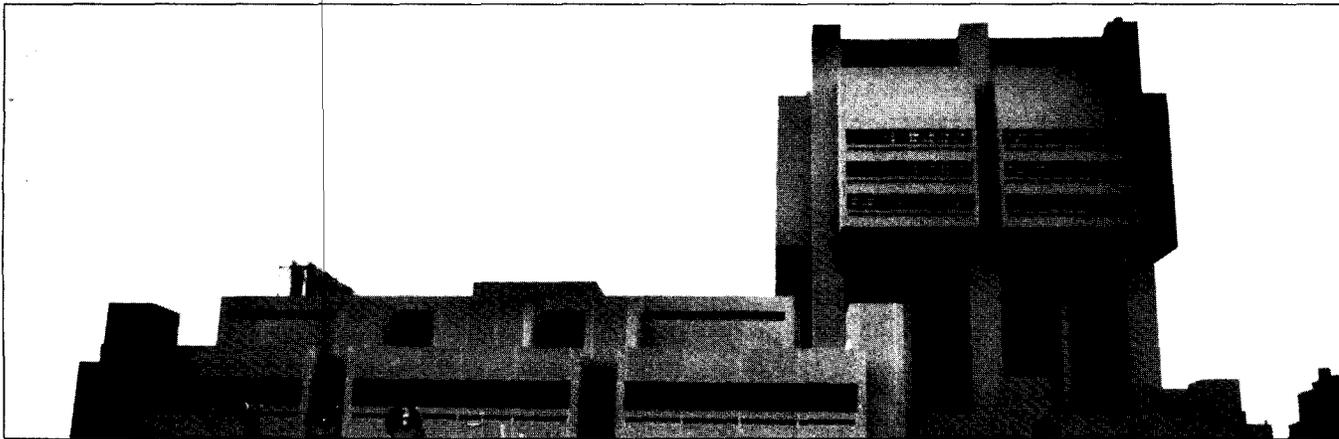
Call for Papers: Annual Transportation Research Conference

Deadline for Abstracts is Nov. 28

The ninth annual Transportation Research Conference, sponsored by the University of Minnesota Center for Transportation Studies, will take place next May 19 and 20 at the Sheraton Park Place in St. Louis Park.

The conference is a forum for research findings and their applications regarding all modes of transportation, and it invites presentations from researchers and practitioners.

For information and a submittal form, call Catherine Ploetz, 612/626-2259, cploetz@tc.umn.edu.



Clinical Trials

{continued from page 1}

Hence the changes, completed and soon to arrive, in the way the University of Minnesota administers clinical research, as described by the six conference speakers:

Furcht and colleagues have created the PSRSO and intend to provide “one-stop shopping” for sponsors seeking investigators and investigators seeking help with proposals for clinical research.

The Clinical Trials Center, part of the PSRSO and run by interim director James Cloyd, manages a \$1.25 million agreement with pharmaceutical-maker G. D. Searle and Co. for multiple clinical trials.

The General Clinical Research Center, an NIH-funded organization designed to help NIH-funded investigators, will increasingly collaborate with privately sponsored investigations, said its director, David Brown.

To help speed review of clinical protocols, the support staff at UM’s Research Subjects’ Protection Programs (RSPP) has doubled in the last four years, Keane reported.

ORTTA staff, both sponsored project administrators and patent and technology marketing staff, will take up part-time residence at the Academic Health Center, said Wink.

Electronic grant management will soon make it easier to track the progress of proposals through the administrative checkpoints.

ORTTA will try “parallel processing” of clinical proposals, so that a proposal can proceed to multiple checkpoints simultaneously—ORTTA’s review can proceed at the same time as a dean’s review, for example.

“Master contracts,” like the one with Searle, will be written, meaning that problematic issues like publishing rights can be settled once with a sponsor, then the settlement applied to multiple trials.

Keane, however, loudly defended caution and warned that haste could lead to grim mistakes. “We are not going to change certain fundamental elements of our [RSPP’s] practice,” she said, “because we are forbidden by federal mandate and moral compunction not to short-change the protection of research subjects.”

{next page}



The panelists at the Clinical Trials Research conference (from left): Leo Furcht, Ed Wink, David Brown, Moira Keane, David Zuckerman, and Alan Hirsch

Why Compete for Clinical Trials?

Hirsch spoke first and addressed the primary question—“Why?” Why should the University compete for privately sponsored clinical research? “To create knowledge, to create hope, and to provide options to patients,” Hirsch answered. “It is the only way to create new therapies and to reject ineffective ones.” Even patients receiving placebo benefit from optimal care and education in every other regard, Hirsch argued.

Clinical trials serve the Academic Health Center, Hirsch argued, by providing one of the few available routes for collaboration between the AHC and the outside medical community. It is also an important part of attracting and retaining faculty. “We give up salary to work in the AHC. Anything that cuts down on our ability to get clinical research, further reduces our income.”

For the Fairview organization, clinical research, said Hirsch, can provide profit, draw patients, and foster excitement among the primary care community.

So the University *should* pursue clinical trials for private industry, Hirsch concluded, and “we have to change the perception that our regulatory services represent the black hole.”

The Industry Needs Speed

Zuckerman described a pharmaceutical industry under pressure to do more trials faster, and a growing list of research facilities—including commercial companies devoted to nothing but clinical trials—competing to provide those trials.

But Zuckerman also offered this good news: The industry tends to prefer AHCs. “You don’t have to be better than for-profit facilities, you just have to be as good,” he said. “As soon as you’re as good, the field tilts in your favor.”

In the life of a typical drug, the time for spending has grown, and the time for earning has shrunk. The required number of trials and subjects has doubled in recent years, according to Zuckerman. In the 1960s it took 8 years to bring a new discovery to market, now it takes 15, and products only earn significant income until their patents expire—about 20 years after discovery. That’s why, when trials are delayed by red tape, it costs sponsors \$1 million a day. “This is the problem the entire industry, including you folks, is up against,” said Zuckerman.

The industry’s response has been to replace the buddy system with the bottom line; to take responsibility for protocol, lab work, and statistical analysis away from investigators; to work through “contract research organizations” and “site management organizations” instead of dealing directly with investigators; and to conduct a given trial via “competitive enrollment” with multiple investigators.

A survey of the pharmaceutical industry led Zuckerman to this conclusion about the bottom line: Private sponsors of clinical trials require “45 days from first contact through first patient signed up.” That means, if sponsors aren’t confident a trial will start enrolling subjects within a month and a half of calling the U to find an investigator, they won’t call.

The AHC Task Force Found . . .

Trying to win the competition for a clinical trial at the University, Furcht suggested, is like trying to bid on a house but waiting a year for your credit to clear. “We cannot do business the way we have been,” he said, because the sponsors of clinical trials have “little tolerance for dysfunctional administrative organizations.” Furcht is not one to pull punches.

Furcht’s response to the situation was the AHC Research Support Task Force, which started work last September to study grant administration and find ways to improve services to private sponsors and investigators. Furcht’s conference presentation was largely a summary of that group’s February ’97 report (published at <http://www.ahc.umn.edu/tf/rso.html>).

The task force, says its report, found no performance standards to govern the University committees and offices involved in grant submission and approval; it found paperwork waiting as long as two months for 20 minutes of administrative attention; and it found little attention to “parallel processing”—i.e. taking proposals through multiple administrative steps simultaneously rather than sequentially.

The task force recommended, says its report, rigorous performance criteria; parallel reviews; replacement of

HCMC Invites Participants for Clinical Ob-Gyn Studies

The Department of Obstetrics and Gynecology at Hennepin County Medical Center invites participation by University of Minnesota physicians and patients in several HCMC clinical studies.

Current Ob-Gyn studies at HCMC include work on bacterial vaginosis, yeast, acute pelvic infections, and contraception. Physicians and their staff are encouraged to participate by referring or enrolling patients, supervising study, or authoring papers. Compensation is available to physicians and patients.

Contact Wendy Johanson, R.N., director of clinical research, 612/347-8534.

AHC's Conflict Review Committee with a more narrowly focused organization; creation of the Private Sector Research Service Office to "off-load bureaucracy from PI's" as Furcht described it; more staff and more efficiency at the offices of Research Subjects' Protection Programs, Sponsored Projects Administration, and Patents and Technology Marketing; and centralized coordination of all clinical trials—human and animal—at the University.

The PSRSO is almost up and running. It has a staff of three now: research support service managers Debra Dykhuis and Judith Parker, and research nurse coordinator Deborah Lasher. It is searching for a director. Its mission, according to the task force, should eventually span the entire life and work of a clinical trial, from preparing proposals to helping with closing reports, including reviewing protocols, preparing applications for human subjects approval, and negotiating contracts. (For more information, call Dykhuis at 612/624-9154, dykhu001@tc.umn.edu.)

Furcht stressed that investigators' use of the PSRSO's help is strictly optional; it is meant to coordinate and streamline, not duplicate, existing services.

The U's Clinical Research Center

The General Clinical Research Center, created in 1969 and funded by the NIH, currently has 60 trials running, about a quarter of them industry sponsored, reported its director, David Brown. He expects industry's portion to increase.

The center's chief mission, Brown said, is to support NIH-funded investigators, but its funding now includes some \$4 million from industry sources. "The GCRC is

already operating," he said, "in a manner that is completely compatible with expansion of the mission to include a larger component of other [than federal] sources of financial support and interaction."

To aid in clinical trials the GCRC now offers 14 beds, 11 nurses, dietitians, and consultation in molecular biology and biostatistics. Along with providing resources for clinical study, it's mission includes fostering collaboration between basic and clinical science and encouraging a corps of expert clinical researchers.

In the future, Brown plans to increase the breadth of the center's research, increase its use of ambulatory patients and beds in other facilities, improve training of clinical investigators, work more closely with the U's magnetic resonance facility, and develop a mass spectrometry lab and a cell propagation facility.

Brown also said he plans to improve the efficiency of protocol processing and review. "Although I have been in this institution for 30 years conducting clinical investigations, I also haven't learned how to cope with the system," he said. "I probably will never *cope* with the system, but will constantly strive to improve it."

ORTTA Makes Improvements

"Our office is trying to meet some of the demands and unique qualities of clinical trials for business and industry," said Ed Wink, who leads ORTTA.

ORTTA is now setting up offices in the AHC so that staff from Sponsored Projects Administration (SPA) and Patents and Technology Marketing (PTM) can work more closely with AHC investigators and with the PSRSO. SPA now has a team of four grant administrators who specialize in nothing but industry sponsors. "Keeping office hours in the PSRSO will be an opportunity for those four to meet with the faculty who work with industry and to negotiate together as a team," said Wink.

Wink also reported that SPA will try parallel processing of contracts. "The same proposal packets that you're walking through the department, the dean's office, and the conflict review committees," he said, "we will start reviewing as soon as possible, so that by the time you've gotten their approvals, we're ready to go."

The new Electronic Grants Management System (EGMS) is now in place to route NIH proposals through the University electronically; eventually it will serve proposals to industry as well. "This will help in terms of trying to find where a proposal is in the system," said Wink.

And ORTTA will work, said Wink, to develop more "master contracts," like the one with Searle. In the Searle agreement, he said, "We have all of the controversial items

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RAR Seminars

Ethics and Animal Use
by Marly Cornell
of the Animal Rights Coalition
1:00 P.M., October 10, 5-276 Millard

History of Laboratory Animal Use
by Wendy Wagner
UM Research Animal Resources
1:00 P.M., November 14, 5-276 Millard

resolved: We've talked about publication rights and intellectual property, so that we do not have to worry about them each time we have a new project. It's just a case of setting up a work scope and a budget."

"Now we're not kidding ourselves that everything's going to happen without some problems," Wink cautioned, however. "Each company has a little different approach to things. These are bilateral contracts, not standard NIH proposals that we can move very quickly."

Research Subjects are Protected

The human subjects and animal care committees are "embracing the notion of change," according to Moira Keane, who directs administrative support for those committees. "We agree," she said, "that in order to stay competitive, this institution needs to do some things differently."

Among recent changes, Keane cited new data systems, moving the offices to Mayo Building, a guide to the review process now published on the web (<http://www.research.umn.edu/subjects/humans/guide/noframe.htm>), doubling both the support staff in the past four years and the number of reviewers serving on the IRB: Human Subjects Committee—the committee that must review and approve any research with human subjects at the University.

"Over 80 volunteers now serve as reviewers," Keane reported. "That's a tremendous institutional commitment."

"We are available to provide some consulting to you as you develop projects," said Keane, and "we *do* have benchmarks about how quickly we move things through."

On the other hand, Keane argued that some of the changes investigators have suggested are not possible, for practical, legal, or moral reasons. "What you've heard described this morning, the changes in the way we do business—we are not prepared to respond specifically to those mandates," she said.

"We cannot compromise IRB review," Keane argued. "The last thing we need in this effort to enhance our reputation with clinical trials, and with the community that we have pledged to serve, is to have bad things happen to our research subjects."

The University is held to more complex, sometimes stricter standards than some other research facilities, Keane explained. Private clinical trials facilities, for example, are governed by the FDA; University trials are governed by both the FDA and the NIH.

The University's formal "assurance of compliance" with NIH's Office for Protection from Research Risks (OPRR) is what "allows us to stay in business," said Keane, and it governs every human subject at the University, whether a

trial is funded by government, industry, or the University itself. So the University has to comply with both FDA and NIH regulations, even when they differ.

"If we want to have NIH money, and if we want to be an academic health center, we have to live with that tension," said Keane.

"We encourage you to continue in the dialogue with the research subjects' office and with the committees," Keane concluded. "That's the only way that we're going to improve our effort of protecting our subjects and accomplish the goal of being a stellar clinical research center."

by Phil Norcross

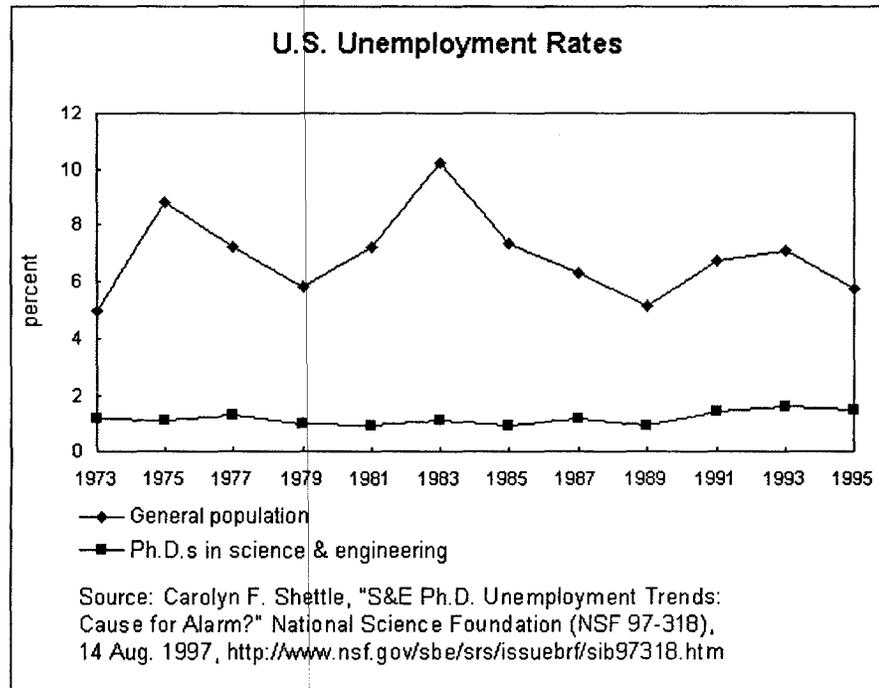
Investigators Need to Tell IRB and IACUC Where to Send Approvals

Once an investigation is approved, the staff of UM's Research Subjects' Protection Programs (RSPP) is happy to notify sponsors of that approval, but they can only do so if investigators tell them where and to whom to send the notification.

Oftentimes, proposals go to sponsor agencies before they have been approved by the University's Institutional Review Board (IRB) or Institutional Animal Care and Use Committee (IACUC), with the understanding that certification of approval will soon follow.

In order to send notification of approval when the time comes, RSPP needs the name and address of the contact person, the agency assignment number, and the fax number of the agency contact person. None of this information is available to the RSPP office until the researcher provides it.

Researchers will please understand and remember to supply that information.



National Science Board will Review U.S. Graduate Education

The National Science Board, the governing body of NSF, began review of the future of U.S. graduate education in the sciences with a three-day open meeting at the University of Houston October 8 through 10.

The meeting is related to the NSB's decision to take up its statutory mandate to provide advice on national science policy. NSB has decided to make its initial effort in two areas: the future of graduate science education in the United States and priority-setting in federal support for scientific research.

On the issue of government-wide priority setting for federal support of science, Richard Zare, NSB chair, reported that he has met with a range of senior government science officials, including NIH director Harold Varmus, Dept. of Energy science chief Martha Krebs, and John Gibbons, the president's science advisor. The reaction, Zare said, "varied from enthusiasm to disinterest."

Based on those discussions, Zare recommended to board members that NSB, as an experiment, proceed with a working paper developed by NSB's Ad Hoc Committee on Strategic Science and Engineering Policy Issues, chaired by Ian Ross, former director of Bell Labs. The paper deals with priority setting for science.

Asked if NSB had requested NSF to seek the experience and advice of the broader scientific community, including economists and science policy experts, Zare responded that no "program announcement" inviting research proposals in this field is under development.

by John Holmfeld, *Washington Fax*, Sept. 10, 1997

Bianco Elected to NABR Board

Richard Bianco of the Department of Surgery has been elected to the Board of Directors of the National Association for Biomedical Research.

NABR calls itself "the only national, nonprofit organization dedicated solely to advocating sound public policy that recognizes the vital role of humane animal use in biomedical research, higher education, and product safety testing." It lobbies and speaks for the scientific community with regard to legislation and regulation. Its 350 members include universities, medical and veterinary schools, hospitals, professional societies, and pharmaceutical makers.

Bianco's service to NABR is related to his role as the University's "institutional official" for the animal care program, meaning he has ultimate responsibility for animal care at the University, and for reporting to federal agencies about that care. Bianco also directs the experimental surgical services program in the Department of Surgery and is special assistant to the senior vice president for health sciences.

He was elected to the NABR board during its annual meeting last September.

Congratulations to the 1997-98 Graduate School Doctoral Dissertation Fellows

Each doctoral dissertation fellow receives an academic stipend plus tuition and health insurance. The faculty fellowship committee selected the 62 fellows in University-wide competition from 148 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.

Doctoral Dissertation Fellows 1997-98

David L. Agesen

Geography

Land Tenure, Management Strategies, and Natural Resource Degradation in the Upper Percey River Watershed: A Case Study from Southern Argentina

Adviser: Connie Weil

Brigetta M. Abel

German

Identities in Flux: German Exile Works After 1933

Adviser: Ruth-Ellen Joeres

Heejung Lee Ahn

Music

Ruth, A Dramatic Cantata

Adviser: Judith Zaimont

Paul D. Barclay

History

Hill Tribes, Plains Dwellers, Decaying Empires, and Progressive Nations: U.S. and Japanese Colonialism in the Philippines and Taiwan: 1890s-1930s

Advisers: Byron Marshall and David Noble

Lisa A. Bergin

Philosophy

The Communication of Knowledge Across Difference

Advisers: Douglas Lewis and Helen Longino

Daniel J. Birkholz

English

Harley Lyrics and Hereford Maps: The Multiple Geographies of Medieval England

Advisers: Rita Copeland and David Wallace

Mark D. Bjelland

Geography

Recycling the Industrial City: Brownfield Restoration and Redevelopment in Minneapolis-St. Paul and Vancouver, B.C.

Adviser: John Adams

Stefanie A. Brachfeld

Geology

A Study of Post-Depositional Remanent Magnetization Lock-In: Natural and Synthetic Records of Geomagnetic Field Behavior

Adviser: Subir Banerjee

Diana J. Burgess

Psychology

Do Women Perpetuate Gender Discrimination: Understanding the Antecedents and Consequences of Intragroup Discrimination

Adviser: Eugene Borgida

Leslie J. Carver

Child Psychology

The Dawning of a Past: The Emergence of Declarative Memory in Infancy

Adviser: Charles Nelson

Samuel A. Chambers

Political Science

Language and the Burden of Politics

Adviser: Lisa Disch

Leah A. Chase

Biochemistry, Molecular Biology, and Biophysics

Quisqualic Acid Transport, Sensitization, and Neurotoxicity in Rat Hippocampal Slices

Adviser: James Koerner

John M. Collins

Comparative Studies in Discourse and Society

Children of the Stones: Studies in the "Generation" of Palestinian National Identity

Adviser: Bruce Lincoln

Mervyn L. de Souza

Biochemistry, Molecular Biology, and Biophysics

Molecular Basis of Bacterial Atrazine Catabolism

Advisers: Michael Sadowsky and Lawrence Wackett

Robbie C. Dohm-Palmer

Astrophysics

The Formation and Evolution of Nearby Dwarf Galaxies

Adviser: Evan Skillman

Graduate School News

Yoav Dori

Chemical Engineering

Supported Bioactive Langmuir-Blodgett Bilayers

Adviser: Matthew Tirrell

Caitlin J. Downey

Classics

Greek League Architecture (Fourth to Second Centuries B.C.E.) and the City of Messene

Adviser: Frederick Cooper

Eric C. Eckwall

Microbiology, Immunology, and Molecular Pathobiology

Determining Factors in the Pathogenicity and Biological Control of Potato Scab Disease

Adviser: Janet Schottel

Dmitry I. Garagash

Civil Engineering

Near-Tip Processes of a Fluid-Driven Fracture

Adviser: Emmanuel Detournay

Christoph E. Geiss

Geology

The Development of Rock-Magnetic Proxies for Paleoclimate Reconstruction

Adviser: Subir Banerjee

Susan L. Giovengo

Molecular Veterinary Biosciences

Kainic Acid-Induced Hyperalgesia in the Mouse

Adviser: Alice Larson

Beth A. Haney

Psychology

How Civic Engagement Begets Civic Engagement: A Motivational Analysis

Adviser: Eugene Borgida

William H. Huber

Physics

Novel Transport Phenomena in Narrow Superconducting Wires

Adviser: Allen Goldman

Mina Hwang

Communication Disorders

The Effects of False Starts and Repetitions on Word-Monitoring by Non-Brain-Damaged Adults

Advisers: Robert Brookshire and Jennifer Windsor

Angela H. Karstadt

English

Swedish American English: A Longitudinal Study of Language and Identity

Adviser: Genevieve Escore

Donald E. Kramer

Materials Science and Engineering

Constitutive Properties of Nanoscale Thin Films by Nanoindentation

Adviser: William Gerberich

Michael D. Kriese

Materials Science and Engineering

Fracture Behavior of Composites

Adviser: William Gerberich

Timothy E. Langlais

Mechanical Engineering

Computer Methods for Multiaxial Fatigue

Advisers: Thomas Chase and Jeffrey Vogel

Heeyoung Lee

Nursing

The Factors Influencing Functional Outcome in Elders with Hip Fracture

Adviser: Mariah Snyder

Catherine A. Luther

Mass Communication

Evolving Media Images in U.S.-Japan Relations and Their Influence on Policy Making and Public Opinion

Adviser: Chin-Chuan Lee

Michelle J. Markley

Geology

Structural Style of the Siviez-Mischabel Nappe

Adviser: Christian Teyssier

Deborah G. Martin

Geography

Claiming Place and Community: Place Identity and Place-Based Organizing in Inner-City Neighborhoods

Adviser: Helga Leitner

Monika Mehta

Comparative Literature

Censorship, the Post-colonial State, and Sexuality: Reframing Film Censorship of Sex in Indian Cinema

Adviser: John Mowitz

Antoinetta Mira

Statistics

MCMC Methods

Adviser: Luke Tierney

David B. Mizelle

American Studies

"To the Curious": Exhibition Animals, Human Identity, and the Contested Boundary Between Man and Beast in Early America, 1735-1816

Advisers: Richard Leppert and David Noble

Hans C. Nesseth

Political Science

Consultants and Clients: Global Markets of Expertise and the Remaking of Social Organizations

Advisers: Raymond Duvall and Kathryn Sikkink

Sandeep Nijhawan

Mechanical Engineering

Particle Nucleation and Growth in Silane Low-Pressure Chemical Vapor Deposition

Adviser: Peter McMurry

Graduate School News

Eric J. Olson

Chemical Physics

Ultrafast Chemistry of Metal-to-Ligand Charge-Transfer Excited States

Adviser: Paul Barbara

Timothy E. Parshall

Ecology

Hemlock Invasion into Wisconsin Forest Stands over the Past 2000 Years

Adviser: Margaret Davis

Jason A. Payne

Materials Science and Engineering

Measurement and Control of Stress in Solidified and Solidifying Coatings

Advisers: Lorraine Francis and Alon McCormick

Scott D. Pletcher

Ecology

Age-Specific Effects of Mutations Affecting Mortality in *Drosophila*

Adviser: James Curtsinger

Cynthia L. Port

Psychology

The Relationship of Life Events to PTSD in Older War Veterans

Adviser: Patricia Frazier

Laura J. Rediehs

Philosophy

Representing Realism

Adviser: Ronald Giere

Michael S. Reidy

History of Science and Technology

The Flux and Reflux of Science: The Study of the Tides and the Organization of Early Victorian Science

Advisers: Sally Kohlstedt and Roger Stuewer

Andrew P. Robinson

Forestry

Measurement and Modeling of Critical Factors in Forest Regeneration and Implications for Models of Forest Ecosystem Dynamics and Management

Adviser: Alan Ek

Susan L. Schalge

Anthropology

Female-Headed Households and Women's Work in Dar es Salaam

Adviser: David Lipset

Nancy A. Schellhorn

Entomology

Cannibalism and Interspecific Predation: The Interactions Among Coccinellid Species, Aphid Densities, and Sweet Corn

Adviser: David Andow

Jacob J. Schmidt

Physics

Domain Wall Creation and Destruction in Hard and Soft Magnetic Materials

Adviser: E. Dan Dahlberg

M. Kathryn H. Schmitz

Kinesiology

Three Studies of the Relationship of Physical Activity to Body Weight

Adviser: Arthur Leon

Dhavan V. Shah

Mass Communication

Framing Values: News Constructions and Individual Processing of Political Issues

Adviser: Daniel Wackman

Sharad J. Shanbhag

Neuroscience

Representation of Dynamic Force by Cerebellar Purkinje Cell Activity

Adviser: Timothy Ebner

Mary L. Skemp

French

Creating Subjectivity: The Representation of Self in the Works of Women Writers in Renaissance France

Adviser: Susan Noakes

Christopher S. Sneddon

Geography

The Sustainability of Water Resource Development in Northeast Thailand

Adviser: Eric Sheppard

H. Justin Steinberg

English

Lyric Marvels and Marvelous Voyages in Late Medieval England and Italy

Adviser: David Wallace

Susan M. Steuer

History

Religious "Second Careers" of Medieval Widows in Northern England

Adviser: Barbara Hanawalt

Amy J. Symstad

Ecology

Effects of Plant Diversity on Community and Ecosystem Properties

Adviser: G. David Tilman

Kendall T. Thomson

Chemical Engineering

A First Principles Study of Zeolites and Related Alumino-silicates

Adviser: H. Ted Davis

Graduate School News

Kristin M. von Ranson

Psychology

Association Among Disordered Eating, Substance Abuse, and Personality in an Epidemiological Sample of Female Adolescents and Their Parents

Adviser: William Iacono

Tiffany A. West

Child Psychology

Infantile Amnesia and Memory Development in Deaf Individuals: A Role for Language?

Adviser: Patricia Bauer

Geoff G. Zhang

Pharmaceutics

Water Activity Measurements for Quantifying Hydration Equilibria

Adviser: David Grant

Xiaodong Zhang

Chemical Engineering

Role of Silicone Surfactant in Polyurethane Foaming Process

Advisers: H. Ted Davis and Christopher Macosko

Igor Zutic

Physics

Nonlinear Electrodynamics in the High-Temperature Superconductors

Adviser: Oriol Valls

**R&D Performance
by Colleges & Universities
in 1993,
by State**

<u>rank</u>	<u>state</u>	<u>(\$\$ millions)</u>
1	California	2380
2	New York	1545
3	Texas	1387
4	Maryland	1128
5	Massachusetts	1094
6	Pennsylvania	1019
7	Illinois	758
8	Michigan	700
9	North Carolina	605
10	Ohio	594
11	Georgia	547
12	Florida	489
13	Wisconsin	444
14	Washington	428
15	Virginia	405
16	New Jersey	374
17	Connecticut	365
18	Missouri	345
19	Minnesota	332
20	Colorado	331
...
22	Indiana	303
23	Iowa	299
44	North Dakota	54
*51	South Dakota	22

* The ranking includes Washington, D.C., among the "51" states.

Source: NSF, *National Patterns of R&D Resources: 1996*, NSF 96-333, <http://www.nsf.gov/sbe/srs/nsf96333/pdfstart.htm>

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

- King, L. The fair use dilemma (The complex issues surrounding the fair use of digital images and the rights of museums). *Museum News* 76.4 (1997): 36-37.
- Freedman, K. Curriculum inside and outside school: representations of fine art in popular culture. *Journal of Art & Design Education* 16.2 (1997): 137-145.
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More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

National Institutes of Health

NIGMS

Exploratory Studies

The National Institute of General Medical Sciences is inviting applications for exploratory developmental studies to test novel and significant hypotheses for which there is little preliminary data but if confirmed would significantly change current thinking; projects to explore a new experimental organism or system to address difficult basic biomedical questions; and projects to develop innovative techniques and methods applicable to studying basic biomedical problems.

Projects must support the NIGMS mission. For example, research in cell biology and molecular biophysics, including basic studies of the structure and function of cells, cellular components, the fundamental mechanisms of inheritance and development; and basic studies in pharmacology, physiology, biochemistry, and other areas.

The grants will provide up to \$70,000 a year in direct costs for up to two years.

This is an ongoing program with annual deadlines of **February 1**, **October 1**, and **June 1**. For further information contact James Cassatt, Division of Cell Biology and Biophysics, National Institute of General Medical Sciences, 45 Center Drive, MSC 6200, Bethesda, MD 20892-6200; 301/594-0828, fax 301/480-2004, czj@cu.nih.gov, or Judith Greenberg, at the same address, 301/594-0943, fax 301/480-2228, greenbej@gml.nigms.nih.gov. The solicitation is available at gopher://gopher.nih.gov:70/11/res/nih-guide/pa-files/PA-97-049.

U.S. Department of Education

Fund for the Improvement of Postsecondary Education

The U.S. Department of Education is requesting proposals to the Fund for the Improvement of Postsecondary Education. The purpose of the program is to provide grants or enter into cooperative agreements to improve postsecondary education opportunities. The agency has listed seven invitational priorities:

- 1) Projects to support new ways of ensuring equal access to postsecondary education, and to improve rates of retention and program completion especially for low-income and under-represented minority students.
- 2) Projects to improve campus climates for learning by creating an environment that is safe, welcoming, and conducive to academic growth for all students.
- 3) Projects to support innovative reforms of undergraduate, graduate, and professional curricula that improve not only what students learn, but how they learn.
- 4) Projects to make more productive use of resources to improve teaching and learning; and to increase learning productivity—that is, to transform programs and teaching to promote more student learning relative to institutional resources expended.
- 5) Projects to support the professional development of full- and part-time faculty by assessing and rewarding effective teaching; promoting new and more effective teaching methods; and improving the preparation of graduate students who will be future faculty members.
- 6) Projects to promote innovative school-college partnerships and to improve the preparation of K-12 teachers.
- 7) Projects to disseminate innovative postsecondary education programs which have already been locally developed, implemented, and evaluated.

Approximately \$5 million will be available for an estimated 72 new awards. The range of awards will be \$15,000 to \$150,000 per year, averaging \$70,000, for up to 36 months.

Preapplications are due **October 24, 1997**; final applications are due **March 20, 1998**. For applications or information contact the Fund for the Improvement of Postsecondary Education (FIPSE), U.S. Department of Education, 600 Independence Avenue SW, Room 3100, ROB-3, Washington, DC 20202-5175, 202/358-3041. You may also call 202/708-5750 between 8 and 5 Eastern time; e-mail fipse@ed.gov. Application text may be obtained from the internet at <http://www.ed.gov/offices/OPE/FIPSE/>.

■ National Institute of Justice Research Fellowships

The National Institute of Justice, through its Crime Mapping Research Center (CMRC) is inviting applications for fellowships to support research and development in computerized crime mapping. Fellows investigate new approaches and applications of Geographic Information System (GIS) technology in the criminal justice community. Current research topics include development of crime mapping algorithms, theory of crime and place, and use of maps by criminal justice professionals. Fellows will be expected to prepare reports, suitable for publication by NIJ, summarizing the results of their research.

Funding is based on the quality of proposals received and the extent to which they relate to ongoing NIJ priorities. Fellows receive full financial and logistical support, as well as access to NIJ criminal justice resources. NIJ especially seeks applications from geographers, GIS specialists, criminologists, and senior researchers in other related disciplines. Fellows reside at NIJ for three to eighteen months.

There is **no application deadline**. For further information contact Nancy La Vigne, National Institute of Justice, Crime Mapping Research Center, 202/616-4531, lavigne@ojp.usdoj.gov. The announcement is also available at the National Criminal Justice Reference Service homepage, <http://www.ncjrs.org/fedgrant.htm#NIJ>.

■ National Institute of Justice Basic and Applied Research

The National Institute of Justice is inviting investigator-initiated grant applications for basic and applied research on a broad range of issues such as violent crime, alcohol- and drug-related crime, community crime prevention, and forensic science.

Themes in this year's solicitation include *rethinking justice*, which encourages the research community to propose studies such as ways to benefit from victims' perspectives on justice system outcomes and involving the community in justice; *understanding the nexus*, which focuses on such areas as juvenile drug use and escalation of juvenile firearms violence, and research on drugs and alcohol and their connections with domestic violence; *breaking the cycle*, which encompasses topics such as interventions in sex offender and spouse batterer behaviors, and parenting skill interventions for parents and

guardians in at-risk households and neighborhoods; *creating the tools*, which focuses on topics such as enhanced DNA technology and profiling; *expanding the horizons*, which invites researchers to move beyond traditional crime definitions and criminal relationships and consider such issues and law enforcement with nontraditional and creative partners such as health services or corporations.

Applicants may also propose projects in areas outside the themes but within the general mission areas of corrections, courts and prosecution, violence and other criminal behaviors, domestic violence and violence against women, victims of crime, situational crime prevention, juvenile and community crime prevention, drugs, and forensics.

Awards generally range from \$25,000 to \$300,000 a year and last for one to two years. NIJ also awards small grants for less than \$50,000 in the same areas appropriate for larger grants.

There are two deadlines of **December 16, 1997** and **June 17, 1998**. For further information contact the Justice Department Response Center, 800/421-6770 for a copy of the solicitation and/or referral to program staff. The solicitation may also be found at <http://www.ncjrs.org/fedgrant.htm#nij>.

■ National Institute of Justice Visiting Fellowship Program

The National Institute of Justice is inviting applications for the Visiting Fellowship Program which supports research and development on high-priority topics that enhance the capabilities of criminal justice systems to combat crime, violence, and substance abuse. Fellows conduct independent research on criminal justice issues relevant to NIJ and public policy. Through the program, fellows may investigate new approaches for resolving operational problems and become involved in NIJ's criminal justice research national program.

Funding is based on the quality of proposals received and the extent to which they relate to ongoing NIJ priorities. Fellows receive full financial and logistical support, as well as access to NIJ criminal justice resources. Visiting fellowships last from six to eighteen months.

There is **no application deadline**. For further information contact Edwin Zedlewski, National Institute of Justice, 202/307-2953. The announcement is also available at the National Criminal Justice Reference Service homepage, <http://www.ncjrs.org/fedgrant.htm#NIJ>.

■ Environmental Protection Agency Investigator-Initiated Grants

The Environmental Protection Agency (EPA) has released information on the FY98 investigator-initiated grants programs. EPA invites research grant applications in the following areas of special interest:

- 1) Exploratory research: human health and environmental chemistry. Deadline, **December 16, 1997**. Contact Clyde Bishop, bishop.clyde@epamail.epa.gov, 202/564-6914.
- 2) Indicators of global climate change. Deadline, **February 12, 1998**. Contact Barbara Levinson, levinson.barbara@epamail.epa.gov, 202/564-6911.
- 3) Interindividual variation in human susceptibility to environmentally-caused disease: physics and environmental engineering. Deadline, **March 31, 1998**. Contact David Reese, reese/david@epamail.epa.gov, 202/564-6919.

For further information contact the U.S. Environmental Protection Agency, National Center for Environmental Research and Quality Assurance (8703R), 401 M Street SW, Washington, DC 20460; 800/490-9194. The complete announcement can be accessed on the internet at <http://es.inel.gov/ncerqa/rfa/>.

■ Environmental Protection Agency Fellowships for Graduate Environmental Study

The Environmental Protection Agency is inviting fellowship applications under its FY 1998 Science to Achieve Results (STAR) program with Fellowships for Graduate Environmental Study. The program seeks to encourage promising students to obtain advanced degrees and pursue careers in environmentally related fields. Potential research areas include physical, biological, and social sciences; mathematics and computer science; engineering; and environmental law.

Awards are for up to \$34,000 a year to cover the stipend, tuition, and expenses for each of 100 fellowships. Project periods are up to two years for masters fellows and three years for doctoral students.

The application deadline is **November 14, 1997**. The announcement is available on the National Center for Environmental Research and Quality Assurance homepage, <http://es.inel.gov/ncerqa/rfa/>. For program information, click on *Frequently Asked Questions*. EPA also maintains a toll-free help line, 800/490-9194.

■ Environmental Protection Agency Environmental Education Grants Program

The Environmental Protection Agency (EPA) is soliciting proposals for the Environmental Education Grants Program. These projects should increase public awareness and knowledge about environmental issues; provide the public with the skills needed to make informed decisions and take responsible actions; enhance critical-thinking, problem-solving, and effective decision-making skills; and teach individuals to weigh various sides of an environmental issue to make informed and responsible decisions. Environmental education *does not* advocate a particular viewpoint or course of action.

Approximately \$3 million should be available in 1998. 25 percent of available funds must go to small grants of \$5,000 or less; there is a maximum of \$250,000 for a single grant. Nonfederal matching of at least 25 percent is required. Proposals requesting over \$25,000 must be submitted directly to EPA headquarters; those requesting \$25,000 or less must be submitted to the appropriate regional office. Organizations may submit more than one proposal if the proposals are for different projects.

The proposal deadline date is **November 15, 1997**. A complete copy of the announcement is available from ORTTA and may be requested by calling 624-7021 or by sending a note to gopher@ortta.umn.edu. The standard federal application form (SF-424) and budget (SF-424A) may be requested by calling Sally Hanft, EE Coordinator 800/424-4EPA or 206/553-1207. The announcement may also be downloaded from <http://eelink.umich.edu> or <http://www.nceet.snre.umich.edu/grant.html>.

■ U.S. Arms Control and Disarmament Agency William C. Foster Fellows Program

The U.S. Arms Control and Disarmament Agency (ACDA) is inviting applications for the William C. Foster Fellows visiting scholars program. ACDA will fund up to six one-year fellowships. The program will match scholars' salaries and benefits. Candidates must be U.S. citizens and tenured faculty at a U.S. institution of higher education.

The application deadline is **January 31, 1998**. For information contact the Foster Fellows Program, U.S. Arms Control and Disarmament Agency, 320 21st Street NW, Washington, DC 20451; 202/647-8090. Information is also available at <http://www.acda.gov/fellow.htm>.

■ Department of Energy

Management of Greenhouse Gases

The U.S. Department of Energy has issued a research and development announcement entitled *Global Climate Change—Novel Concepts for Management of Greenhouse Gases*, soliciting the submission of innovative, pathbreaking concepts to sequester and recycle greenhouse gases, and bring those concepts to a stage of technical development sufficient to prove validity on an engineering scale. Specifically, the objective is the development of novel, less-costly concepts to sequester and recycle greenhouse gasses, which includes ways to reuse, or store greenhouse gases or their conversion products.

The concepts may include chemical or biological conversion methods, as well as physical storage. The greenhouse gases of interest are CO₂, CH₄ and N₂O associated with the production and use of fossil fuels.

Awards resulting from the solicitation will be divided into three phases. Phase I involves a technical and preliminary economic assessment of the proposed concept; Phase II involves laboratory and bench-scale development of the proposed technology; and Phase III involves pilot- or larger-scale testing to bring the technology to an engineering scale. An industrial company will be required to perform at least 30 percent of the effort in Phase III.

The deadline for submission of proposals is **November 18, 1997**. The solicitation is available upon written request to the Acquisition and Assistance Division, U.S. Department of Energy, Federal Energy Technology Center, PO Box 880, Morgantown, WV 26507-0880. It will be sent on diskette in a Word Perfect 6.1 format. The solicitation is also available through the internet at <http://www.fetc.doe.gov/business/solicita.html>. Further information may be requested by calling Raymond R. Jarr, Contracting Officer, at the address above, 304/285-4088, fax to 304/285-4683 or raymond.jarr@fetc.doe.gov. All requests should reference the solicitation number (DE-RA26-98FT35008), title, and should include a point-of-contact at the requestor's location.

■ Kornfeld Foundation

The Emily Davie and Joseph S. Kornfeld Foundation focuses its grantmaking on medical ethics issues and end-of-life decisions, with the goal of enhancing the rights and dignity of the individual, particularly in the face of adversity, pain, or death.

The foundation supports efforts to develop easily understood and effective legal safeguards of the individual's right to be free of pain and to exercise informed choice in the face of death, and makes grants to improve professional and public education about those rights. The foundation funds the study of pain in the natural course of illness, death in the process of aging or as a result of illness, and the relation between pain, drugs, consciousness, and human productivity.

The foundation awarded a total of \$1.1 million in 1996.

There is **no deadline**. For further information contact Fenella Rouse, Executive Director, Emily Davie and Joseph S. Kornfeld Foundation 30 Rockefeller Plaza, 55th Floor, New York, NY 10112; 212/649-5800, fax 212/649-5801.

■ Jacobs Research Funds Small Grants Program

The Jacobs Research Funds' small grants program is seeking applications for research grants. Research should concentrate on living Native American persons in the areas of social and cultural anthropology. Eligible field studies should address cultural expressive systems, such as music, language, dance, mythology, world view, plastic and graphic arts, intellectual life and religion. Studies in comparative psychological analysis are appropriate. Studies may cover the indigenous peoples of Canada, Mexico, and the continental United States, including Alaska, although studies in the Pacific Northwest are preferred.

The maximum grant is \$1,200. In 1997, 16 grants were awarded.

Formal academic credentials are not required. Applicants who are inexperienced in research should arrange for the collaboration or supervision of an appropriate and experienced research scholar. Grant funds may cover fees for consultants, supplies, transportation to and from the field, and lodging in the field. Funding is not available for salaries, ordinary living expenses, or major equipment. Projects in archaeology, physical anthropology, applied anthropology, applied linguistics, or archival research are not eligible for support.

The next deadline is **February 15, 1998**. For further information contact Jacobs Research Funds, Whatcom Museum of History and Art, 121 Prospect Street, Bellingham, WA 98225; 360/676-6981, fax 360/738-7409, jacobs@cob.org, or on the web at <http://www.cob.org/cobweb/museum/jacobs.htm>.

■ National Science Foundation Professional Opportunities for Women

The National Science Foundation (NSF) is inviting grant applications under its Professional Opportunities for Women in Research Education (POWRE) program. The POWRE program provides opportunities for further career advancement, professional growth, and greater prominence of women in engineering and in the scientific disciplines supported by NSF; and to encourage more women to pursue careers in science and engineering by providing greater visibility for women scientists and engineers in academic institutions and in industry.

The program is targeted at women scientists and engineers who currently hold nontenured academic positions or industrial positions; hold academic tenured or tenure-track positions; or plan to re-enter academia. Women scientists and engineers who 1) hold a doctorate in a field of research supported by NSF; 2) are U.S. citizens, nationals, or permanent residents at the time of proposal submission; and 3) hold, or have held, a faculty or research-related position in a U.S. college, university or other nonprofit institution are eligible to apply. Applicants for the visiting professor position may currently be employed in industry, or be on the staff of a scientific or engineering professional organization.

Grants will range up to \$150,000 for visiting professors and visiting researchers, and up to \$75,000 for research/educational enhancement.

The application deadline is **December 9, 1997**. For program information, contact Priscilla Nelson 703/306-1361, pnelson@nsf.gov. Access the solicitation online at <http://www.nsf.gov/home/search.htm>; click on documents. Search by document number NSF 97-91.

■ National Institute of Standards and Technology Precision Measurement Grants

The National Institute of Standards and Technology is seeking project proposals for research grants for FY99 in the field of precision measurement and fundamental constants. Precision Measurement Grants are awarded each year to faculty members of U.S. universities or colleges for work in determining values for fundamental constants, investigating related physical phenomena, or developing new, fundamental measurement methods.

Applicants must submit preproposals by **February 2, 1998**, of not more than five double-spaced pages outlining the objective, motivation, and technical approach of

the research and the amount and source of current funding for the research. It should include a concise biographical sketch of the applicant and a list of the applicant's most important publications. Four to eight semifinalists will be selected to submit more detailed proposals.

Submit three copies of the preproposal to Barry N. Taylor, B161 Technology Building, NIST, Gaithersburg, MD 20899-0001; 301/975-4220. The Precision Measurement Grants Web page is at <http://physics.nist.gov/ResOpp/grants/grants.html>.

■ National Institutes of Health Development of New, Targeted Drugs

The National Cancer Institute (NCI), National Institutes of Health, seeks Cooperative Research and Development Agreements (CRADAs) with pharmaceutical or biotechnology companies or academic institutions to create, optimize, and test new targeted drugs as therapeutics for cancer.

Any CRADA for the biomedical use of such technology will be considered. The goals of the CRADAs include the rapid publication of research results and timely commercialization of products, diagnostics, and treatments that result. The CRADA collaborators will have an option to negotiate the terms of an exclusive or nonexclusive commercialization license to resulting inventions.

DHHS scientists are developing a variety of novel targeted drugs—defined as a conjugated molecule consisting of a specific binding moiety, such as a monoclonal antibody, a receptor ligand, or a similar construct, and a natural product or synthetic cytotoxic moiety which may include, but not be limited to the broad category of toxins and drugs. The specific binding and cytotoxic moieties would be joined by appropriate linker molecules. NCI can provide a variety of natural product cytotoxic drugs either in the unaltered state or chemically-modified (to facilitate conjugation) as starting substances for the creation of new targeted drug agents. In addition, a limited number of monoclonal antibodies which can be used in this drug development effort are available from NCI.

Organizations must submit a confidential proposal summary, preferably one page or less, to NCI by the **first week in December**. Guidelines for preparing full CRADA proposals will be communicated shortly thereafter to all selected respondents. Proposals and questions may be addressed to Dr. Thomas M. Stackhouse, Office of Technology Development, National Cancer Institute-Frederick Cancer Research and Development Center, PO Box B, Frederick MD 21702-1201; 301/846-5465, fax 301/846-6820.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	272	\$ 40,033,524
Awards Processed		
August 1997	312	33,089,156
Proposals Submitted		
July 1997 - August 1997	539	93,931,971
Awards Processed		
July 1997 - August 1997	548	58,698,099
Proposals Submitted		
July 1996 - August 1996	543	91,922,061
Awards Processed		
July 1996 - August 1996	673	65,306,237

Men's Domestic Violence Initiative

Amos S. Deinard, Community University Health Care Center
Nina Bacaner, Hospital and Clinic

U Care
\$10,000 - 7/1/97-6/30/98

Quisqualate Sensitization and Neurotoxicity

James F. Koerner, Biochemistry, Medical School
Robert J. Roon, Biochemistry, Medical School
Alvin J. Beitz, Veterinary Pathobiology

NIH, NINDS
\$208,220 - 8/1/97-5/31/98

Site-Directed Spectroscopic Probes of Myosin

David D. Thomas, Biochemistry, Medical School

Muscular Dystrophy Association
\$141,863 - 7/1/97-6/30/98

Adaptation of Islets of Langerhans to Pregnancy

Robert L. Sorenson, Cell Biology and Neuroanatomy
Todd C. Brelje, Cell Biology and Neuroanatomy
Robert P. Elde, Cell Biology and Neuroanatomy

NIH, NIDDK
\$278,049 - 7/1/97-6/30/98

Transmission and Pathogenesis of KS-Associated Herpesvirus

Ashley T. Haase, Microbiology

NIH, NCI
\$211,714 - 7/15/97-4/30/98

Modulation of Calcium Signaling in Neurons

Stanley A. Thayer, Pharmacology

National Science Foundation
\$90,001 - 8/1/97-7/31/98

Molecular and Cellular Mechanics of Muscle

Vincent A. Barnett, Physiology

NIH, NIAMS
\$101,875 - 8/15/97-6/30/98

Dementia of the Alzheimer's Type Spouse Training: Managing Behaviors/Making Decisions

Kenneth W. Hepburn, Family Practice and Community Health
Marsha L. Lewis, Nursing
Sheila Corcoran, Nursing

NIH, NCNR
\$283,488 - 8/15/97-7/31/98

Modeling Opioid Receptor Structure and Function

David M. Ferguson, Medicinal Chemistry
Philip S. Portoghese, Medicinal Chemistry

NIH, NIDA
\$100,000 - 9/30/96-6/30/97

Modeling Opioid Receptor Structure and Function

David M. Ferguson, Medicinal Chemistry
Philip S. Portoghese, Medicinal Chemistry

NIH, NIDA
\$85,648 - 7/1/97-5/31/98

Molecular Mechanisms of T Cell Receptor Antagonism

Caridad Rosette, Laboratory Medicine and Pathology
Stephen Jameson, Laboratory Medicine and Pathology

Damon Runyon-Walter Winchell Cancer Fund
\$98,500 - 8/1/97-7/31/98

Role of Notochordal Cells in Nucleus Pulposus Matrix Metabolism

Theodore R. Oegema, Jr., Orthopaedic Surgery
Dean J. Aguiar, Orthopaedic Surgery

NIH, NIAMS
\$25,420 - 8/1/97-7/31/98

Youth and Aids Projects (YAP): HIV Prevention Program for Youth

Gary Remafedi, Pediatrics

St. of Minn., Department of Health
\$379,230 - 6/13/97-12/31/98

In Vivo Prevention of Murine Graft-Versus-Host Disease

Bruce Blazar, Pediatrics
Mortari Panoskaltis, Pediatrics

Daniel A. Vallera, Therapeutic Radiology

NIH, NIAID
\$270,236 - 7/1/97-6/30/98

Institutional Research Grant

Bruce Blazar, Pediatrics

American Cancer Society, Inc.
\$270,000 - 7/1/97-6/30/00

Pre-Clinical Evaluation of a Mechanical Mitral Valve in the Sheep Model

Richard W. Bianco, Surgery

St. Jude Medical, Inc. (St. Paul)
\$107,402 - 6/1/97-5/30/99

Minnesota Training Grant in Aging

Robert L. Kane, Health Services Research

NIH, NIA
\$259,371 - 8/15/97-4/30/98

Smoking Prevention and Cessation Among Older Adolescents

Deann Lazovich, Epidemiology

NIH, NCI
\$185,409 - 8/1/97-7/31/98

Evaluation of the Buyers Health Care Action Group

Jon Christianson, Health Services Research

Robert Wood Johnson Foundation
\$654,297 - 8/1/97-7/31/00

Cancer Surveillance Using Health Claims-Based Data Systems

A. M. McBean, Health Services Research

NIH, NCI
\$339,136 - 6/17/97-5/31/98

Minnesota Area Geriatric Education Center

Robert L. Kane, Health Services Research
 HRSA, Bureau of Health Professions
 \$162,000 - 9/1/97-8/31/98

Renal Residua of Hemorrhagic Fever with Renal Syndrome Among Korean War Veterans

A. M. McBean, Health Services Research
 Association of Schools of Public Health
 \$141,162 - 7/2/97-7/1/98

Epilepsy Clinical Research Program

Robert J. Gumnit, Hospital Clinic
 Ilo E. Leppik, Neurology
 NIH, NINDS
 \$958,195 - 7/15/97-5/31/98

Simulation Studies of Macromolecular Materials

Daniel Kroll, Medicinal Chemistry
 National Science Foundation
 \$75,000 - 8/1/97-7/31/98

Craniofacial Pain Research Center of Discovery

Charles Schachtele, Oral Sciences
 Kenneth M. Hargreaves, Restorative Sciences
 NIH, NIDR
 \$147,000 - 8/1/97-7/31/98

Aerodynamic Breakup of Liquids

Daniel D. Joseph, Aerospace Engineering and Mechanics
 Gordon S. Beavers, Aerospace Engineering and Mechanics
 USDoD, Army
 \$100,000 - 6/4/97-5/31/98

Non-Heme Oxygen Activation in Enzymes and Models

Lawrence Que, Jr., Chemistry
 NIH, NIGMS
 \$228,166 - 4/1/97-3/31/98

Spectroelectrochemistry of Flavo- and Metalloproteins

Marian T. Stankovich, Chemistry
 NIH, NIGMS
 \$197,641 - 7/1/97-6/30/98

Investigation of Recycled Asphalt Pavement (RAP) Mixtures

David E. Newcomb, Civil Engineering
 Andrew Drescher, Civil Engineering
 St. of Minn., Department of Transportation
 \$130,000 - 7/23/97-10/31/99

Superpave Level I Mix Design at the Local Government Level

David E. Newcomb, Civil Engineering
 Bruce A. Chadbourn, Civil Engineering
 St. of Minn., Department of Transportation
 \$100,000 - 7/23/97-4/30/99

Behavior of Rock in Multi-Axial States of Stress

Joseph F. Labuz, Civil Engineering
 National Science Foundation
 \$50,210 - 8/1/97-7/31/00

Evaluation of Electrochemical Chloride Extraction

Carol K. Shield, Civil Engineering
 William H. Smyrl, Chemical Engineering and Materials Science
 Catherine E. French, Civil Engineering
 St. of Minn., Department of Transportation
 \$75,841 - 8/20/97-11/30/98

Control of Distributed Nonlinear Systems and Semiconductor Manufacturing

Allen Tannenbaum, Electrical Engineering
 National Science Foundation
 \$40,867 - 10/1/97-9/30/98

Bicycle Counter

N. Papanikolopoulos, Computer Science and Engineering
 St. of Minn., Department of Transportation
 \$97,000 - 8/11/97-11/30/99

Workshop on Teaching of Power Electronics

Ned Mohan, Electrical Engineering
 William P. Robbins, Electrical Engineering
 National Science Foundation
 \$10,000 - 10/1/97-9/30/98

Technician Support: Minnesota Isotope Laboratory

Lawrence Edwards, Geology and Geophysics
 Emi Ito, Geology and Geophysics
 National Science Foundation
 \$100,000 - 9/1/97-8/31/99

Computations and Analysis of Fluids and Materials

John Lowengrub, Mathematics
 National Science Foundation
 \$138,000 - 8/15/97-7/31/00

High-Resolution Surface Tension Measurements of Liquid Crystals

Cheng-Che Huang, Physics and Astronomy
 American Chemical Society, Petroleum Research Fund
 \$50,000 - 9/1/97-8/31/99

Site-Directed Mutagenesis of the Photosynthetic Water-Oxidizing Complex

Bridgette Barry, Biochemistry (CBS)
 National Science Foundation
 \$60,000 - 8/1/97-7/31/98

Zebrafish as a Model System for Biomedical Research

Perry B. Hackett, Jr., Genetics and Cell Biology
 NIH, DRR
 \$202,414 - 9/1/97-8/31/98

Abstract Gambling Theory, Stochastic Games, and Predictive Inference

William D. Sudderth, Statistics
 National Science Foundation
 \$24,000 - 8/1/97-7/31/98

City Quest

Michael R. Rothweiler, General College
 Intermediate School District #287
 \$104,434 - 1/1/97-12/31/97

Product and Process Engineering for Starch-Based Polymers

Mrinal Bhattacharya, Biosystems and Agricultural Engineering
 V. R. Voller, Civil Engineering
 Kim A. Stelson, Mechanical Engineering
 National Science Foundation
 \$100,070 - 7/1/97-6/30/98

Pink Bollworm Risk Assessment for Southern U.S.

William D. Hutchison, Entomology
 U.S. Department of Agriculture
 \$53,207 - 6/1/97-5/31/98

Commercial Vegetable Production Practices

David K. Wildung, North-Central Ag. Experiment Station, Grand Rapids
 Agricultural Utilization Research Institute
 \$14,900 - 6/24/97-6/14/98

Regional Research and Monitoring Plan for Northern Goshawk

David E. Andersen, Fisheries and Wildlife
 St. of Minn., Department of Natural Resources
 \$1,050 - 6/15/97-6/30/97

Work on Redpine Poles

Elmer L. Schmidt, Wood and Paper Science
 Bell Pole Co., Ltd.
 \$11,878 - 8/15/97-8/15/98

Recruitment Strategy Contract

Kenneth Brooks, Forest Resources
Peace Corps
\$15,919 - 9/15/97-6/15/98

Forest Structure and Species Composition Six Years after Applying Glyphosate, Hexazinone and Imazapyr

Edward I. Sucoff, Forest Resources
USDA, Forest Service
\$8,000 - 6/1/97-3/31/99

Investigating the Effect of Roadway Design on Driver Behavior

John Carmody, Underground Space Center
St. of Minn., Department of Transportation
\$17,583 - 7/1/97-2/28/98

Lifework Plans Video

Janet M. Hively, Education and Human Development
Robert H. Bruininks, Educational Psychology
St. of Minn., Department of Children, Families, and Learning
\$30,000 - 6/20/97-8/31/97

Promoting Quality Services Through the Development and Delivery of Supervision and Management Training for Educators, Supervisors, and Mid-Level Managers

Scott McConnell, Educational Psychology
Teri Wallace, Institute on Community Integration
Amy Hewitt, Institute on Community Integration
Department of Health and Human Services
\$82,680 - 7/1/97-6/30/98

Generation of Visual Aids in Elementary School Mathematics

Lynn Friedman, Educational Psychology
Minneapolis Public Schools
\$15,000 - 7/1/97-6/30/98

Americorps/Youth Works Evaluation

Gary W. Leske, Work, Community, and Family Education
Rob Shumer, Work, Community, and Family Education
Jane Maland, Work, Community, and Family Education
St. of Minn., Commission on National and Community Service
\$98,204 - 9/1/97-8/31/98

Probiotic Supplements, Prebiotics, and Colon Health

Linda J. Brady, Food Science and Nutrition (CHE)
Francis F. Busta, Food Science and Nutrition (COAFES)
Dan O'Sullivan, Food Science and Nutrition (COAFES)
U.S. Department of Agriculture
\$90,765 - 7/15/97-7/31/99

Consumer Support Grant Training Demonstration

Nancy N. Eustis, Humphrey Institute
Kenneth W. Hepburn, Family Practice and Community Health
K. Charlie Lakin, Educational Psychology
Robert Wood Johnson Foundation
\$172,191 - 8/1/97-7/31/99

Access Abroad: Enhancing International Study for Students with Disabilities

Sue Kroeger, Disability Services
A. Balkcum, International Studies
USDE-Fund for the Improvement of Postsecondary Education
\$81,772 - 9/1/97-8/31/98

Molecular Mechanisms of Aspirin in Cancer Prevention

Zigang Dong, Hormel Institute
NIH, NCI
\$96,908 - 7/11/97-6/30/98

Collaborative Research on the Rate of Slip and Offset On the Karakorum Fault

Erik T. Brown, Large Lake Observatory
Peter Molnar, Large Lake Observatory
National Science Foundation
\$62,859 - 6/15/97-5/31/99

Minority Faculty Fellowship Program

Gerald L. Hill, Medicine, Duluth
Department of Health and Human Services
\$32,250 - 7/1/97-6/30/98

Lactate Transporters in Brain: Age and Stroke Related Expression

Lester R. Drewes, Medicine, Duluth
American Heart Association, Minnesota Affiliate
\$25,500 - 7/1/97-6/30/98

Biochemical and Molecular Mechanistic Studies of N-Alkyl Perfluorosulfonamides

Kendall B. Wallace, Pharmacology, Duluth
Minnesota Mining and Manufacturing Co.
\$265,385 - 6/1/97-11/30/98

Mitochondrial Interactions of Peroxisome Proliferators

Kendall B. Wallace, Pharmacology, Duluth
Minnesota Mining and Manufacturing Co.
\$100,000 - 6/1/97-11/30/98

Monitoring Birds on Great Lakes National Forests

Joann M. Hanowski, Center for Water and Environment, Duluth
Gerald Niemi, Center for Water and Environment, Duluth
USDA, Forest Service
\$49,000 - 5/1/97-4/30/98

Peatland Restoration

Kurt W. Johnson, Natural Resources Research Institute, Duluth
Thomas Malterer, Natural Resources Research Institute, Duluth
Susan Galatowitsch, Plant Biology
Legislative Commission on Minnesota Resources
\$275,000 - 7/1/97-6/30/99

Carbon and Energy Flow and Plant Community Response to Climate Change in Peatlands

John Pastor, Natural Resources Research Institute, Duluth
Karen L. Updegraff, Natural Resources Research Institute, Duluth
University of Notre Dame
\$98,659 - 8/1/97-7/31/98

Human Settlements, Changing Landscape, Anyang, China

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
National Science Foundation
\$48,220 - 9/1/97-8/31/99

Analysis of Mosquito Treatment Data

Lyle Shannon, Biology, Duluth
Metropolitan Mosquito Control Commission
\$2,900 - 6/3/97-12/31/97

Mathematics Equity Project

Edmond Lundstrom, Education and Human Service Professions, Duluth
American Indian Science and Engineering Society
\$5,300 - 1/1/97-12/31/97

Water on the Web: Monitoring Minnesota's Lakes on the Internet

Bruce H. Munson, Education, Duluth
Richard Axler, Natural Resources Research Institute, Duluth
George E. Host, Natural Resources Research Institute, Duluth
National Science Foundation
\$301,840 - 7/1/97-6/30/98

Minnesota Technology Inc. Regional Office

Kjell R. Knudsen, Center for Economic Development, Duluth
Randy Studier, Center for Economic Development, Duluth
Minnesota Technology, Inc.
\$700,000 - 7/1/97-6/30/98

Deformed Amphibians 1997-98

David M. Hoppe, Biology, Morris
St. of Minn., Pollution Control Agency
\$22,000 - 7/1/97-6/30/99

Fax number	612/624-4843		
ORTTA's Web site	http://www.ortta.umn.edu		
	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
.....	Liz Li	624-0810	liz-l@ortta.umn.edu
USDI (Non-IT), St. of Minn, DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	Ed Welsch	624-5571	edward@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
.....	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed.	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	Andy Swope	625-1359	andy@ortta.umn.edu
NSF (non-IT), MnDOT	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	Doyle Smith	626-9741	doyle@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

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Add	<input type="checkbox"/>	Department: _____
Delete	<input type="checkbox"/>	Building & Room No.: _____
		City, State, Zip (if off campus): _____

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RESEARCH REVIEW

Office of Research and Technology Transfer

November 1997

Archibald Leyasmeyer Leads Minnesota Humanities Commission

Associate Professor of English Language and Literature Now Chairs Board of Directors for MHC

“Archie moves easily between the academy and the public,” says Cheryl Dickson, president of the Minnesota Humanities Commission, and that talent is why Archibald Leyasmeyer, of UM’s English faculty, now chairs the Commission’s board of directors.

For his part, Leyasmeyer says he joined the MHC board because working outside of the “ivory tower” helps his own and his students’ understanding of texts, because the Minnesota Commission leads the humanities funding transition now taking place in all 50 states, and because he wants to help continue the work that the “exceptional” people at the MHC have been doing for years. Within that work, Leyasmeyer particularly applauds the MHC’s humanities workshops for K-12 teachers and a relatively new effort to create a core humanities curriculum for elementary students.

“Academe can be a terrarium, a very self-contained world,” says Leyasmeyer. Working with professional theaters and K-12 teachers, he’s discovered, “is a very healthy way of testing the sense and nonsense of what we do in academe. With insight into how other parts of the world operate, it’s much easier to avoid looking upon what goes on in academe as the standard for everything. It has enriched me as an individual, as an academican, and as a thinking, acting human being.”

Community arts and humanities is not what Leyasmeyer had in mind when he joined the University’s Department of



Archie Leyasmeyer has also served on the Weisman Museum’s board since 1987.

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 5
November 1997

Editor: Phil Norcross
Editorial Assistant: Tove Jespersen
Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Sponsored Projects Administration

Frequently Asked Questions About Sponsored Projects

Question: AFSCME and civil service employees will have the option of requesting a pay-out of accumulated vacation. Can sponsored projects be charged if an employee elects to do this?

Answer: Yes.

The process is basically the same as when an employee with accumulated vacation terminates. You'll need to keep three things in mind when charging sponsored projects:

1. The charge must be allocable. A project can only be charged for the vacation earned on the project.
2. The project must be able to absorb the cost without affecting the PI's ability to complete the project. If the charge would be a financial hardship, preventing the PI from finishing the project, an alternative nonsponsored account must be used.
3. If vacation was earned on more than one project, and the initial account charged is a sponsored project, the redistribution must be done within the same accounting period.

The University does not accrue vacation allowances; therefore, departments must have a basis for allocating earned vacation.

By accepting a sponsor's award, the University enters into an agreement to perform the project outlined in the proposal for the amount awarded. Unforeseen expenses which do not directly benefit the project but would impair our ability to complete the work would not meet the test of reasonableness. It is important to retain the trust and confidence of our sponsors through the prudent use of their funds.

The plan is limited to one payroll string for vacation pay-out. ORTTA recommends this be a nonsponsored account unless the pay-out is entirely allocable to a single project. However, if a sponsored account is used, and a redistribution is required, the redistribution must be done within the current accounting period to avoid drawing payment for inappropriate expenditures on our federal letter-of-credit.

by Todd Morrison, SPA

Grants Management Project

Continuing Progress with EGMS

EGMS was demonstrated to the CUFS User Group annual meeting on October 20. This provided an update of the EGMS presentation to that group a year ago.

The purpose of EGMS remains the same: to facilitate the preparation of proposals and the establishment and management of awards. EGMS provides consistency in our proposal development process and captures budgets and other information that is required to accurately and efficiently establish an award in the University's financial system. It also improves the timeliness and quality of the information that faculty and administrators have available to do proposals and manage their grants.

Today, EGMS users can 1) prepare NIH forms for new and competing renewal proposals, 2) prepare NSF forms for new and renewal proposals, 3) generate a proposal routing form (BA23) and route it electronically through a department, to the dean's office, and on to ORTTA, and 4) create a faculty profile in the Expertise Database, which can be used to populate the biographical information in a proposal.

A simplified NIH format is planned; it will allow novice users of EGMS to take advantage of the system to create

the budget pages and probably the face page and check list. EGMS rules and audit capability will ensure that appropriate fringe benefits, indirect cost rates, and inflation factors are calculated and applied to the budget. It will allow input of institutional information as needed.

If this capability is used, it will improve processing in ORTTA, because budgets will be correct when they get to ORTTA for final transmittal to agencies. Then ORTTA staff can concentrate their reviews on more substantial parts, such as justifications, prior to our final institutional signature. Using this tool for budget preparation will enable ORTTA to capture the budget information in a database that can be used to facilitate the acceptance of the award and the establishment of the account.

Reminder Regarding Proposal Routing Forms (BA23s)

When the supply of paper BA23 forms is depleted in University Stores, your only option will be the EGMS web site. Either complete the form on the web, print it, and get signatures; or print a blank copy to complete and get signatures on.

Because the new proposal routing form does not address material transfer agreements (MTAs), a new MTA form will soon be available on ORTTA's web site: <http://www.ortta.umn.edu/forms/forms.htm>.

Correction:

David Zuckerman runs Customized Improvement Strategies

Research Review misidentified David Zuckerman in its October cover story, where it reported his presentation regarding trends in the pharmaceutical industry and competition for clinical trials.

Zuckerman is owner and "principal" of a consulting organization, Customized Improvement Strategies, that provides "prescriptions for business improvement" to academic health centers seeking to increase their share of the clinical-trial market.

Zuckerman and his organization offer surveys of the pharmaceutical industry, workshops on how to speed negotiations and increase enrollments, and on-site evaluations. They have served clinical trial interests at, for example, Washington University, St. Louis; Searle and Co., Skokie; Group Health Plan, St. Louis; Voluntary Hospitals of America, Dallas; and here at the University of Minnesota. They have also served companies in the banking, aerospace, electronics, and software industries.

Zuckerman can be reached at 314/434-3232 or zuckerman@simon.wustl.edu.

I apologize to Zuckerman for the error.

Phil Norcross, editor

Minnesota's Top Foundations

(national rankings in parentheses)

Minnesota has one of the higher densities of nonprofits per capita in the country, according to a new analysis of nonprofit organizations that report to the Internal Revenue Service. The report's figures show that Minnesota had 9.2 nonprofit charities per 10,000 residents in 1994—the 13th highest total in the nation.

Largest Private Foundation

The McKnight Foundation (15th)

Largest Community Foundations

The Saint Paul Foundation (7th)

The Minneapolis Foundation (19th)

Largest Corporate Foundations

General Mills Foundation (15th)

Norwest Foundation (24th)

3M Foundation (44th)

First Bank System Foundation (50th)

Minnesota Ranks:

- Tenth in total foundation giving
- Fifth in foundation giving per capita
- Sixth in foundation giving as a percentage of the state's gross product

Rankings are by total grants paid in 1995.

Source: *Foundation Giving, 1997 edition, The Foundation Center*

UNN Provides Faculty with Real-Live Neighborhood Problems for Students to Solve

Students, faculty, and Twin Cities neighborhood activists find each other for collaborative work via the University-Neighborhood Network (UNN).

The UNN, part of the UM Center for Urban and Regional Affairs, serves as matchmaker between faculty and neighborhood organizations so that students might learn by serving those organizations.

Students of "Housing Policy" (DHA5463/PA5611), for example, are earning their course credit by researching effects—on property values, housing conditions, and senior housing—of a housing repair program of the Powderhorn Park Neighborhood Association in south Minneapolis.

Students of "Management of Non-Profit Organizations" (PA5111) are working with the Summit-University Planning Council in St. Paul to revise the organization's antiquated and controversial by-laws.

Faculty of any Twin Cities college or university are invited to send course descriptions and applied research opportunities for the UNN to list on its web site—<http://thresher.jaws.umn.edu/cura/>. Neighborhood groups are invited to send the UNN ideas for research projects that fill neighborhood needs and match those course descriptions, or ideas that would inspire independent research outside of coursework.

The result is a list of research ideas for students to choose from that will meet course requirements and provide applied research products to neighborhoods.

For a course to work in UNN's system, faculty need to contact the UNN six weeks before the term begins (November 24 for winter term). Likely candidates are courses that cover subjects relevant to urban neighborhoods and that include a student research component.

The UNN began operation last spring. For more information, call 625-0744 for Stephanie Otto, sotto@hhh.umn.edu, or Kris Nelson, director of the NPCR, nelso193@tc.umn.edu.

The UNN, sponsored by the Minneapolis Foundation, is a project of Neighborhood Planning for Community Revitalization at the Center for Urban and Regional Affairs.



Research Animal Resources Seminars

November 12

Rodent & Rabbit Wet Lab Training Session

1:00 to 3:00 PM

Moos Tower

reservations required

call 624-9100

November 14

The Importance of Organ Transplantation

by Mark Bjorklund, transplant recipient

1:00 PM, 5-276 Millard Hall

(Note, W. Wagner, history of lab animal use,
was previously advertised for this date)

December 12

Organ Transplantation: The Process

by Nancy Senst, LifeSource

1:00 PM, 5-276 Millard Hall

January 9

The History of Laboratory Animal Use

by Wendy Wagner, Research Animal Resources

1:00 PM, 5-276 Millard Hall

**RAR's seminar schedule is
available at
[http://www.ahc.umn.edu/rar/
Seminars.html](http://www.ahc.umn.edu/rar/Seminars.html)**

Animal Models in Biomedical Research

Seminar Series

Presented by UM Research Animal Resources

Thursdays at 1:00 PM

Phillips-Wangensteen Room B302

call 624-9100 to reserve a seat

November 20

Auditory Research

(preliminary title)

by Eric Javel, Otolaryngology

December 18

Estrogen Regulation of Gene Expression

by Michel Sanders, Biochemistry

January 22

(title to be announced)

by Carol Wells, Lab Medicine and Pathology

February 26

Heterogeneous Macrophage Antimicrobial Effector Function,

or

Not all Macrophages are Created Equal
by Mark Rutherford, Veterinary PathoBiology

March 26

Platelet/Neutrophil Interaction in Disease

by Douglas Weiss, Veterinary PathoBiology

April 23

Muscle Research

(preliminary title)

by Stephanie Valberg, Clinical and Population Science

May 28

(title to be announced)

by Marilyn Carroll, Psychiatry

Graduate School News

Funding Programs Administered by the Graduate School Fellowship Office

The fellowships listed below are administered by the Graduate School Fellowship Office, which will provide details on application procedures and deadlines. Amounts are subject to change depending on availability of funds; many awards also provide tuition. Contact the Fellowship Office at 321 Johnston Hall, 101 Pleasant Street S.E., Minneapolis, MN 55455, 612/625-7579, gsfellow@tc.umn.edu, <http://www.grad.umn.edu/grad/fellowships/>.

For Graduate Students

Graduate School Fellowships: Intended for recruiting outstanding new students to the University's graduate programs, these fellowships provide approximately \$12,000 for the academic year plus tuition for up to 16 credits per quarter. Prospective students must be nominated by their chosen major field in early February through procedures announced by the Graduate School during fall quarter. Applicants should contact the directors of graduate studies in their major fields in advance. Next nomination deadline: February 2, 1998 (tentative).

Doctoral Dissertation Fellowships: These fellowships are available to Ph.D. candidates who have completed all degree requirements except the dissertation. The fellowship provides approximately \$12,000 for the academic year plus tuition for thesis credits. Candidates must be nominated by their graduate programs through procedures announced by the Graduate School during fall quarter. Next nomination deadline: April 10, 1998 (tentative).

Special Grants for Doctoral Dissertation: Grants of up to \$1,500 to support dissertation research are available to students who have passed written and oral prelims. Final typing and binding costs, tuition, general living expenses, and computer time available through the University are not allowable. Students conducting research involving human subjects must obtain prior approval of the Human Subjects Committee. Applications must be submitted to the Graduate Fellowship Office by the specified deadline in November or April. Next deadline: April 24, 1998.

Harold Leonard Memorial Film Study Grant: Grants are available to graduate or undergraduate students in good standing at the University for specific research expenses in film history, criticism, or aesthetics. Grants rarely exceed \$3,000. Next application deadline: February 13, 1998.

Endowed Fellowships: These fellowships, most available only to currently enrolled graduate students, are supported by endowed income from wills, trusts, and gifts

from organizations or individuals. Not all are offered every year, and stipends vary each year depending on interest income. Recipients are expected to register in the Graduate School every quarter during the year for which they receive an award. Students apply through the Fellowship Office for most endowed fellowships. Next deadline: February 13, 1998.

Block Grants and Tuition Fellowships: The Graduate School allocates a significant share of its fellowship budget directly to graduate programs in the form of Block Grants and Tuition Fellowships, the purpose being to provide programs with discretionary funds to support the most meritorious new and continuing students. All Block Grants and Tuition Fellowships are set up as two-year awards, with half of all programs being invited to submit proposals every other year.

National Science Foundation (NSF) Fellowships: These fellowships are intended for students at or near the beginning of their graduate study in science, mathematics, or engineering. Students apply directly to NSF; the winning entries are then administered by the Graduate School Fellowship Office. Application deadline: early November.

U.S. Steel Loan Fund: This fund provides a limited number of emergency loans to U.S. citizens for educational expenses when other sources of support are unavailable or inappropriate. Students may apply for a one-time loan of up to \$500 for one quarter.

International Competitions Conducted Through the Graduate School Fellowship Office

The Fellowship Office processes applications and, when appropriate, conducts interviews for several competitions for graduate study abroad.

Fulbright Program: Approximately 700 grants are available to over 100 countries. Applicants must have a well-defined research project or study plan that makes a stay in a particular country essential. U.S. citizenship is required. Information on the location, number, and types of awards is available in May. Campus deadline: around mid-September.

Luce Scholars Program: The University may nominate two students for one-year internships in Asia. Applicants should have strong academic credentials, demonstrated leadership, and clearly defined career goals. Applicants must be U.S. citizens who will not yet have reached their thirtieth birthday by September 1 of the program year for which they apply. Those who have a major in Asian stud-

Graduate School News

ies, or who have already had significant exposure to Asia, are ineligible. Eighteen students are selected annually. Campus deadline: early November.

German Academic Exchange Service (DAAD): The University may nominate two advanced graduate students for ten months of study or research in Germany. Applicants must have a well-defined research project that makes a stay in Germany essential. Preference is given to applicants who have been invited by a faculty member at a German university to study or do research in a particular department, institute, or laboratory. Applicants must be 18 to 32 years old. Campus deadline: around mid-September.

For Faculty

Distinguished McKnight University Professors: Every year the Graduate School invites departments to nominate their most outstanding mid-career faculty for this professorship. Recipients hold the title Distinguished McKnight University Professor for as long as they remain at the University. The grant associated with the professorship consists of \$100,000 over five years to be expended at the recipient's discretion. A committee of prominent faculty selects the winners, who are chosen for their scholarly or creative achievements and their potential for greater attainment, the distinction and honor they bring to the University, the quality of their teaching and advising, and their contributions to the wider community. Next nomination deadline: December 12, 1997.

The McKnight Land-Grant Professorship: The goal of this two-year endowed professorship is to provide career development awards for the University's most promising junior faculty at a crucial period in their professional lives. The award consists of a \$21,000 research grant in each of the two years, and a year's leave in the second year to conduct research. Every fall, the Graduate School holds a competition in which departments may nominate their most promising assistant professor. A committee composed of faculty from across the University selects the winners, who 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; the potential for attracting outstanding students; and the significance of their research and the clarity with which it is conveyed to the nonspecialist. Nomination deadline: around mid-October.

Bradley Bostrom is the New Director of Management Information Services

The Office of the Vice President for Research and Dean of the Graduate School has selected a new director for its Office of Management Information Services, to take over for the retiring Judy Howe. Mr. Bostrom is charged with identifying and meeting the needs for information and data

analysis in relation to the University's graduate programs and research activities, as well as supervising software training and technical support. His duties include developing integrated database information systems that enable the seamless interfacing of relational databases. He will also serve as a liaison with similar offices throughout the University and will collaborate with more than 100



directors of graduate studies to help make the data accessible for management of their programs.

Mr. Bostrom, who has a B.A. in physics from Gustavus Adolphus College and an M.S. in software engineering from the University of St. Thomas, has served since 1988 as director of information management for the Minnesota Higher Education Services Office (formerly the Higher Education Coordinating Board). There he established a network of servers and personal computers and connected it to the Internet, the use of which he promotes for information exchange and retrieval. Mr. Bostrom's first day at the University was November 3.

Patents Issued to the University July 1997 through September 1997

Title: **Liposome Adjuvants Containing IL-2**
Purpose: A means of delivering an immune system enhancer, interleukin-2, for treatment of tumors
Inventors: Cynthia M. Loeffler, Arnold S. Leonard, Surgery; Augusto C. Ochoa, Laboratory Medicine and Pathology; Peter M. Anderson, Pediatrics

Title: **Method of Enhancing the Immunotherapeutic Activity of Immune Cells by Depletion of CD8+ T Cells**
Purpose: To enhance the immunotherapeutic activity of immune cells by depleting cells that regulate that activity
Inventors: Augusto C. Ochoa, Fritz H. Bach, Laboratory Medicine and Pathology; Robin L. Geller, Pediatrics

Title: **Isolated Toxin Associated with Kawasaki Syndrome**
Purpose: Part of a group of technologies for diagnosing and treating Kawasaki syndrome
Inventors: Patrick Schlievert, Microbiology; Donald Leung, Cody Meissner, non-University

Title: **Miscible Blend of Polyolefin and Polyolefin Block Copolymer**
Purpose: For blending together different plastic materials, especially polypropylene and polyethylene
Inventors: Frank S. Bates, Jeffrey H. Rosedale, Kristoffer Almdal, Mark F. Schulz, Chemical Engineering and Materials Science

Title: **Highly Cross-Linked Polymeric Supports**
Purpose: A polymer useful as a solid support for a variety of applications
Inventors: Maria Kempe, George Barany, Chemistry

Title: **Stable, Ultra-Low Residence Time Partial Oxidation**
Purpose: Part of a process for partially oxidizing methane by means of a catalyst, thus changing natural gas at remote gas fields into syngas, which is easier to transport
Inventors: Lanny D. Schmidt, Daniel A. Hickman, Chemical Engineering and Materials Science

Title: **Process for the Partial Oxidation of Alkanes**
Purpose: Part of a process for partially oxidizing methane by means of a catalyst, thus changing natural gas at remote gas fields into syngas, which is easier to transport
Inventors: Lanny D. Schmidt, Duane A. Goetsch, Chemical Engineering and Materials Science

Title: **Portable Rock Strength Evaluation Device**
Purpose: Device for measuring strength of rock samples at much less expense than with traditional methods, chiefly for use in mining and drilling
Inventors: Andrew Drescher, Emmanuel M. Detournay, Civil Engineering; Dave A. Hultman, Aerospace Engineering and Mechanics

R&D Performance by States in 1993

Rank	State	R&D performed (\$\$ millions)	Portion of U.S. total (percent)	R&D/GSP ¹ (percent)
1	California	33,721	20.4	4.3
2	New York	10,974	6.6	2.2
3	Michigan	10,778	6.5	5.1
4	Massachusetts	9,486	5.7	5.7
5	New Jersey	9,181	5.6	4.0
6	Pennsylvania	8,278	5.0	3.0
7	Maryland	7,423	4.5	6.2
8	Texas	6,966	4.2	1.6
9	Illinois	6,778	4.1	2.2
10	Ohio	6,398	3.9	2.6
11	Washington	5,422	3.3	4.2
12	Florida	3,526	2.1	1.2
13	Virginia	2,941	1.8	1.8
14	Minnesota	2,922	1.8	2.6
15	Colorado	2,864	1.7	3.2
19	Indiana	2,560	1.6	2.0
22	Wisconsin	1,851	1.1	1.6
28	Iowa	902	0.5	1.5
48	North Dakota	91	0.1	0.7
251	South Dakota	58	0.0	0.4

¹Ratio of R&D performed to gross state product

²The ranking includes Washington, D.C., among the "51" states

Source: NSF, *National Patterns of R&D Resources: 1996*, NSF 96-333,
<http://www.nsf.gov/sbc/srs/nsf96333/pdfstart.htm>

Call for Papers on Health Services

The annual Minnesota Health Services Research Conference will be February 24, 1998, at the Radisson Metrodome.

The organizers invite abstracts on a variety of topics. For information, call Susan Hayes at the UM Institute for Health Services Research, 612/624-8953, hayes019@tc.umn.edu.

Supercomputing Institute Invites Research Proposals

The University of Minnesota Supercomputing Institute supports faculty-initiated research, especially science and engineering research that can be enhanced with supercomputing resources.

In particular, the institute invites UM faculty to make use of two new facilities: The Basic Sciences Computing Laboratory and the University of Minnesota-IBM Shared University Research Program.

Most of the institute's programs provide UM investigators with access to supercomputing facilities. Some programs are open to post-secondary faculty anywhere in Minnesota, as well as to their students and collaborators. Research scholarships and travel grants are also available to applicants with UM sponsors.

All of the institute's resources are awarded on the basis of competitive peer review. Complete calls for proposals, along with application and proposal forms, are available on its web site: http://www2.msi.umn.edu/Programs/alloc_index.html. For more information, call Michael Olesen at 612/624-1356.

Basic Sciences Computing Laboratory

Silicon Graphics workstations for computational research and visualization are available to UM faculty and their research groups. The lab is in the Basic Sciences and Biomedical Engineering Building. There is currently no deadline for requests to use the lab.

Cray Supercomputer Resource Allocation

To researchers in colleges and universities statewide, the institute allocates use of Cray machines for parallel vector processing and for massively parallel processing. The machines are managed by, and user support is provided by, a private company, Minnesota Supercomputer Center, Inc. Proposals are accepted twice a year for allocations lasting six months. However, details regarding the next allocation cycle—for work from July 1 to December 31, 1998—are not yet determined. The institute plans to publish those details in March 1998.

Medicinal Chemistry-Supercomputing Institute Visualization-Workstation Laboratory

UM faculty members and their associates can use the visualization workstations in 7-123 Weaver-Densford Hall. There is currently no deadline for applications.

Scientific Development and Visualization Laboratory

Available to researchers statewide, this lab provides use of UNIX workstations, Sun and Silicon Graphics systems, and Macintosh workstations. Access is automatic for recipients of the institute's research scholarships, travel awards, or allocations of Cray or IBM resources,

and for students in the Scientific Computation Graduate Program. It is also available by separate application. There is currently no deadline.

Supercomputing Project Assistance and Leverage Program

Basic technical assistance for supercomputing projects is available from the institute without submitting a proposal. Additional project assistance is available to UM faculty via competitive proposal. Preference goes to projects which provide leverage for other funding sources. There is currently no deadline for application.

Symmetric Multiprocessing Laboratory

UM faculty may use the Supercomputing Institute's Silicon Graphics symmetric multiprocessing machines—one 32-processor machine and one 4-processor machine—at 1200 Washington Ave. South. There is currently no application deadline.

University of Minnesota-IBM Shared University Research Program

For research in networking, communications, system software, and computational science and engineering, UM faculty may use IBM workstations provided by a collaboration of the UM Office of Information Technology, the UM Department of Computer Science and Engineering, and the Supercomputing Institute, with support from the National Science Foundation. The next application deadline, April 15, 1998, is for work to be performed in the second half of 1998.

Research Scholarship Program

UM faculty may sponsor nominations for research scholarships provided by the Supercomputing Institute. The scholarships provide up to \$17,500, which must be matched one-to-one from a source other than state funds. Ordinarily the scholarships support a postdoctoral associate or a visiting senior researcher. Nominations are due January 15, 1998, for scholarships to run one year beginning July 1, 1998.

Travel Award Program

The Supercomputing Institute supports travel by a UM researcher in order to present supercomputing research results or seek external support for supercomputing research, as well as short visits to the University of Minnesota by research collaborators. Travel grants provide up to \$2,000—with preference for grants up to \$1,000—which must be matched one-to-one from a source other than state funds. Applications are due at least three months before the travel.

National Bioethics Advisors Will Work for Two More Years

The work of the National Bioethics Advisory Commission has been extended for a second two-year period.

The NBAC, created by President Clinton's executive order, was scheduled to disband this fall. Clinton recently extended its charter through 1999.

The commission is chaired by Harold Shapiro, president of Princeton University, and has a budget of about \$2.5 million. It has promised to name a new executive director on November 23, when the full commission next meets.

The commission extension is part of Clinton's recent national apology for events at Tuskegee Institute. For a number of years, researchers at Tuskegee *observed* a group of African American men suffering from syphilis, instead of treating them.

The function of NBAC is to assure, among other things, that humans are not unknowingly part of a research project when a cure is available for their condition.

Shapiro said the extension will allow for more deliberate and complete study, and completion of numerous reports relating to bioethics. The reports can now be released when completed, not because of an arbitrary deadline, Shapiro said.

Shapiro said he expects to release an annual report about commission activities before January. Reports dealing with human subjects and genetics are still under discussion by the commission and will be released in 1998.

Reportedly, a survey of federal agencies detailing how well they protect human subjects in research projects—particularly how well they adhere to the so-called "common rule"—is being considered for release at Tuskegee. The common rule is a government-wide regu-

lation designed to protect people who participate in research projects.

A report dealing with common-rule compliance could be a prime candidate for the Tuskegee release because the report is nearing completion, and protecting human rights is one of the key charges given to the commission by the President in his executive order.

James Childress, chair of NBAC's Human Subjects Subcommittee, said his subcommittee wants to take a look at U.S. institutional review boards next year. The two top issues being readied for report by Childress' subcommittee are the compliance of federal agencies with the common rule and whether to allow decisionally impaired individuals to participate as research subjects and how to protect them if they do. Childress is professor of religious studies at the University of Virginia.

Thomas Murray, chair of NBAC's Genetics Subcommittee, said the subcommittee is now developing an ethical protocol for collecting tissue samples used in research. In the coming year, the subcommittee may consider "genetic privacy and discrimination." Murray directs of the Center for Biomedical Ethics at Case Western Reserve University's School of Medicine.

Areas of particular concern to Murray's group include the use of tissue samples gathered in the course of treatment but that do not require informed consent from the patient. The ethics and the practicality of tissue gathering raises questions about confidentiality and whether the patient can be identified. Another consideration is whether the individual gathering the samples knows at the time whether the tissue is likely to be used in a research project.

from *Washington Fax*, Oct. 21

Responsible Management of Research

a research training workshop
open to all UM faculty

Offered by the
Office of the Vice President for Research
Friday, December 5, 1997
12:30 to 4:00 PM
in Nolte Center room 140
Space is limited.

For information or registration, please write to
RschTrng@tc.umn.edu before Dec. 2.

Call for Papers & Posters

Minnesota Water '98: Protecting Minnesota's Water Supplies

May 5 & 6, 1998
Holiday Inn Metrodome, Minneapolis

Abstracts are due Friday, December 12, 1997
For information, contact the University's
Water Resources Research Institute
1518 Cleveland Ave. North
St. Paul campus
612/624-9282.

English Language and Literature in 1964, nor when he finished his Princeton University dissertation on Daniel Defoe in '67. "I have let life surprise me," he says. "One thing leads to another, and I have found it very satisfying."

Leyasmeyer started helping Minnesota arts and humanities organizations in 1973, when he joined the board of directors of the Guthrie Theater in Minneapolis. He's since served leadership or advisory roles at The Playwrights' Center in Minneapolis; the Jerome Foundation, the Center for Arts Criticism, Penumbra Theatre, and CenterFilm, Inc. in St. Paul; and the Minnesota Arts Forum and the Weisman Art Museum at the University. He joined the Humanities Commission in '94 and was elected chair of its directors, a one-year position, last summer.

As a teacher at the University, Leyasmeyer chiefly helps students read drama. He introduces young students to "Great Plays," runs graduate seminars on Eugene O'Neill and Tennessee Williams, and provides modern drama courses for independent study and the Elderhostel.

In the old days, when the English department had more people to teach its basic courses, Leyasmeyer often taught upper-level courses in whatever plays the local theaters were producing at the time—an assignment he seems particularly suited to.

"Over the years I've had direct experience with how a play is developed," Leyasmeyer explains, "from early drafts, to cold readings, staged readings, rewrites upon rewrites, down to the final production experience using world class professionals. At the Guthrie I've been privileged to sit in on rehearsals and see how the director's thinking translates into a production.

"So when I teach plays here," he says, "I think I am better able to challenge students to think three-dimensionally—to think of a play not as a text or not merely as a text, but as a blueprint for an interpretation that has to be staged in a specific setting. No matter how wonderful the things you are thinking, there are limits within which you have to package them."

Fifteen years ago, Leyasmeyer earned the Morse-Alumni Award for Outstanding Contributions to Undergraduate Education. This year, he speaks of shaping arts and humanities outside the University—"not merely talking about things, but actually shaping them."

The Minnesota Humanities Commission seems to be in pretty good shape right now. At this fall's national conference of state humanities commissions and councils, Leyasmeyer says he found the Minnesota Commission the object of much admiration.

For one thing, both Leyasmeyer and MHC's president Dickson consider the MHC in the "forefront" of the new funding reality. In the old days, the state humanities commissions were largely "pass-through" agencies—they distributed federal money to local applicants. Now that Congress has taken a dislike to the national endowments, the state commissions are pursuing money elsewhere—a task the Minnesota Commission has done well, by most accounts.

Almost half of MHC's funding now comes from the state, and much of the rest from private corporations, foundations, and individuals. It has a new building—a

{next page}

Minnesota Humanities Commission Works in Progress Scholar Grants and Grants for Public Programs

The Minnesota Humanities Commission offers grants for scholarship in the humanities and expects to make about ten such grants in 1998, for up to \$2,500 each. The grants are competitive and may be used in support of research and writing that will reach a public audience.

Though inadequate to support major projects, the MHC hopes the grants will serve to validate scholars' initiatives and provide visibility among other funders.

Deadlines for 1998 have not yet been set precisely: draft applications will be due someday in March and final applications in May.

The MHC also provides funding for collaborations of scholars, cultural organizations, and community groups to help them present public lecture programs, panel discussions, conferences, exhibits, publications, and films. In most cases, applications are accepted year-round.

Through its grants, the MHC seeks to promote appreciation of learning, thoughtfulness, dialogue, and tolerance.

The humanities are, according to the MHC, "the study of reading, writing, language, and thinking. They are the guide to ideas, stories, and themes of all times and peoples, and the key to understanding the diversity and richness of all cultures." The humanities include work in history, literature, philosophy, foreign languages, comparative religion, archaeology, jurisprudence, social studies, the qualitative aspects of the social sciences, and appreciation of the arts.

For information, see <http://www.thinkmhc.org/> or call Jane Cunningham or Mark Gleason at 612/774-0105.

remodeled hospital wing near Lake Phalen in St. Paul—to house its teacher workshops and to rent out as a conference and retreat center. The University's Department of German, Scandinavian, and Dutch has met there, for example, and the School of Public Health.

With those multiple funding sources, the Commission runs "Motherread/Fatheread," a program to help parents learn to read by helping them read to their children; it provides cash grants to community programs, the Midwest Philosophy Colloquium at UM Morris, for example, and African American Quilt Day at the U's Goldstein Gallery; and it runs humanities seminars for K-12 teachers.

This season's titles at the "Teachers Institute," as it's called, include "The Emergence of China as a Superpower," "Painting, Drama, and Civic Life in the Italian Renaissance," and "Civil Rights in America: From Reconstruction to the Million Man March." These are five-day seminars led by Minnesota scholars—Timothy Choy of Moorhead State, Ronald Martinez of UM, and John Powell of UM, respectively. Teachers attend the seminars, and live for the week at the MHC's "Humanities Education Center" on Lake Phalen, entirely at the Commission's expense.

The teachers' seminars are "one of the most productive things we have found," according to Leyasmeyer. "You put teachers through week-long seminars led by some of the best talent in the state, and you expose them to the sheer excitement and rigorous demands of intellectual inquiry, and you excite them and you make them aware of the possibilities and the vitality of learning. They go back to their classes burning with excitement."

Leyasmeyer's interest in moving between the academy and the public sounds loudest, however, when he describes the MHC's new hope for an elementary school core curriculum in the humanities.

Our present elementary school curriculum is in chaos, according to Leyasmeyer. Combine that with the large number of students who move to a new school every year, and educated people end up with little in common.

"Without something in the educational system that provides building blocks, you wind up with a Tower of Babel, people cannot communicate," says Leyasmeyer. Then he adds, "You and I know what 'Tower of Babel' means. To another audience it would make absolutely no sense."

So the MHC has begun to campaign for elementary education that is half standardized core curriculum. It does not wish to

specify the content of that curriculum, but it does urge that someone specify content. "Let any number of people be involved in the defining process," says Leyasmeyer, "but arrive at something so that people can carry on a conversation."

This proposal is not to be confused with the high school graduation standards the state is now writing. Those standards are meant to measure students' proficiency in various matters. The MHC's idea concerns *what* is taught, more than how well students learn it.

Leyasmeyer's contention is that at some early point, students should know something about Egypt's contribution to western civilization, for example. "One is culturally illiterate if one does not have that kind of information," he says.

The idea has its critics, of course. It may be controlling, imperialist, racist, and elitist—designed to manipulate the disadvantaged and humiliate the slow-witted. In response, Leyasmeyer argues that support for the core is strongest among the parents of disadvantaged children, and that culture is not a "high" art.

"The incredible arrogance," he calls it, "that some people are to be privileged and given information, and the guy who's going to be a car mechanic, or a carpenter, or an electrician, he should not know about Mesopotamia? This is like the medieval hidden knowledge business. That's the thing you have to combat. Knowledge is *not* the province only of the college educated or the academicians.

"The humanities are richly inclusive," asserts Leyasmeyer. "They deal with where we have been, where we are, and where we are going. They deal with our experiences, our dreams, and our nightmares. The humanities are everybody's."

by Phil Norcross

Federal Arts & Humanities Appropriations

	Fiscal 1996	Fiscal 1997	Fiscal 1998*
National Endowment for the Humanities	\$110,000,000	\$110,000,000	\$110,000,000
National Endowment for the Arts	99,500,000	99,500,000	98,000,000

* As this *Research Review* went to press in late October, the '98 appropriation had been approved by the conference committee and was awaiting final passage by the full House and Senate.

source: *Chronicle of Higher Education*

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

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**Please send your new citations to
phil@ortta.umn.edu.**

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More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ Procter and Gamble University Exploratory Research Program

The University Exploratory Research Program, inaugurated by the Procter and Gamble Company in 1981, was expressly designed to provide access to new scientific understanding, particularly in areas new to the company. Funding potential break-away insight or discovery is the primary objective of the program. The goal is to fund projects that will try to provide an important and needed advance in basic understanding, i.e., radically new knowledge. For this reason, multidisciplinary project proposals are encouraged.

The exploratory research intended to be supported falls within the broad areas of chemistry, the biological sciences, chemical engineering, and process technology. Up to five proposals will be selected for funding at \$50,000 per year for up to three years; projects are not renewable.

The application deadline is **January 15, 1998**. Eight semifinalist applicants will be presented in Cincinnati. A copy of the announcement, including application forms, is available from ORTTA; it may be requested by calling 624-7021 or sending a request to gopher@ortta.umn.edu. Questions may be addressed to the program administrator via fax at 513/627-1153 or extresprgim@pg.com. The web address is <http://www.pg.com>.

■ Cure Autism Now Foundation

The Cure Autism Now (CAN) Foundation is a new organization founded by parents and physicians dedicated to finding effective biological treatments and a cure for autism. CAN is supporting research grants for biomedical research relating to the etiology or treatment of autism and autistic spectrum disorders. The purpose is to encourage innovative approaches towards finding the causes, prevention, and appropriate therapy of autism. Investigators whose foci have been outside the field of autism as well as innovative investigators from within the

(next column)

field are encouraged to apply. All proposals must have direct relevance to autism or related disorders.

Principal investigators must have an academic and/or nonprofit institutional appointment. Only one application will be accepted from any investigator or laboratory. Proposals will be solicited in the two following areas:

CAN Research Scholar Awards will provide funding for work to be carried out under the supervision of a mentor who is an established investigator. The awards allow a salary stipend of \$40,000 and a \$1,000 travel (conference) allowance per year for two years. Applicants should be no more than four years out of an M.D. or Ph.D. program on the date the fellowship would begin.

Pilot Research Projects will provide funding for investigators at any stage in their careers to work on innovative pilot projects. Preference will be given to projects that have the potential for grant support from federal or other agencies once completed. Projects may be funded up to \$30,000 per year for one to two years. The intent is to provide funding for supplies, equipment, or personnel; no salary for the principal investigator is allowable.

The next deadline is **May 1, 1998**. Applications may be requested from the foundation at 5225 Wilshire Boulevard, Suite 503, Los Angeles, CA 90036; 213/549-0500, fax 213/549-0547, CAN@primenet.com, <http://www.canfoundation.org>.

■ American Federation for Aging Research Biomedical Research

The American Federation for Aging Research (AFAR) funds pilot research projects in the basic mechanisms of aging, the role of aging processes in the pathogenesis of disease, and the nature of age-related deficits such as arthritis, memory loss, visual and hearing impairments, confusion and incontinence. Projects investigating the epidemiology of certain age-related disorders are also considered.

The goal is to fund investigators in the early stages of their independent research careers, enabling them to accumulate preliminary data to apply for major grant support. The ideal candidate is an investigator in the first or second year of a junior faculty appointment. It is anticipated that thirty grants of up to \$40,000 each will be awarded for one or two years.

The application deadline is **December 15, 1997**. Application forms may be requested from AFAR, 1414 Avenue of the Americas, New York, NY 10019; 212/752-2327, fax 212/832-2298, amfedaging@aol.com, <http://www.afar.org>.

■ March of Dimes

Perinatal Epidemiological Research

The March of Dimes (MOD) seeks proposals for innovative projects that use sound epidemiological methods to test biologically plausible hypotheses for the major determinants of infant mortality.

The first round of awards will be restricted to studies that target the causes of preterm deliveries (less than 37 weeks gestation), including early preterm deliveries (less than 34 weeks gestation). MOD will support approaches that integrate robust epidemiologic investigations and at least one biologic or biochemical measurement. Epidemiologic analysis should take into account the interactions of risk factors, including the social determinants associated with adverse perinatal outcomes. Already existing high-quality databases or biologic samples might be utilized. Research on new paradigms based on strong conceptual frameworks are certainly invited. The intent is to provide new insights into the large proportion of preterm deliveries in which the causes (and thus the means of prevention) remain elusive despite years of research and identification of purported risk factors.

Four projects will be supported for an initial period of up to three years at an annual budget of up to \$250,000. Salaries of principal investigators may be supported in part.

Interested investigators should submit a letter of intent, typed in 10-point or larger pitch, not exceeding two single-spaced pages, and containing 1) name, address, phone, fax, and e-mail address of principal investigator; 2) major hypothesis to be tested and key specific aims; 3) brief description of study design including key outcome variables and the statistical framework that will be applied; 4) sociodemographic characteristics of the population to be studied and projected sample size for the epidemiological and biological components; 5) projected time-frame for the investigation; 6) list of any current relevant research support; and 7) two-page, NIH-type curriculum vitae and bibliography.

The letters should be postmarked no later than **November 21, 1997**. Send to Office of the Medical Director, March of Dimes, Yale University School of Medicine, New Haven, CT 06510. For further information contact the March of Dimes at the national office, 1275 Mamaroneck Avenue, White Plains, NY 10605; 914/428-7100 or 914/997-4649, fax 914/428-7849.

■ State of Minnesota

Department of Children, Families and Learning School-to-Work Programs

The Office of Lifework Development, Department of Children, Families and Learning, has prepared a funding and application guide covering several programs in the area of school-to-work. The programs for which institutions of higher education are eligible are listed below.

Agricultural Education School-to-Work Improvement Grants. Grants must be used to demonstrate program improvement and/or program growth that links agriculture education to Minnesota School-to-Work performance indicators and graduation standards. \$250,000 is available; 10 percent matching is required. The next deadline is **January 31, 1998**. Contact Joel Larsen, 612/296-1107.

Lifework Learning Site Grants. Grants to develop and model practices of life-work learning, including vocational preparation, preparation for work, family, and community responsibilities, and lifelong learning. \$350,000 is available; a site must match the grant amount with an equal amount of funding. The next deadline is **January 31, 1998**. Contact John Mercer, 612/282-5980.

Youth Apprenticeship Grants. Grants must be used to develop and implement new comprehensive youth apprenticeship programs. \$450,000 is available; matching is required at 50 percent of the grant request. The next deadline is **January 31, 1998**. Contact Tom Strom, 612/297-2657.

Youth Entrepreneurship Grants. Grants may serve as venture capital to learners who choose to establish a new business from idea to complete ownership, or to expand current businesses. The business must provide a service or product for customers or clients who do not attend or work at the sponsoring school and must meet a need in the local economic planning areas. \$200,000 is available; matching is required at a minimum of 20 percent. The deadline **has not yet been announced**. Contact Tom Strom, 612/297-2657.

A copy of the announcement, including application forms, is available from ORTTA and may be requested by calling Therese Graner at 624-7021, gopher@ortta.umn.edu. For information on application workshops, call Diane Klapak, 612/296-1500. For further information about the application process, call the Grant Coordinator's Office at 612/297-7872.

■ National Oceanic and Atmospheric Administration Coastal Services Center Broad Area Announcement

The Coastal Services Center, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce, announces the availability of federal assistance in the following program areas:

Landscape Characterization and Restoration Program. Contact Pace Wilber at 803/974-6235, pwilber@csc.noaa.gov.

Coastal Change Analysis Program. Contact Dorsey Worthy at 803/974-6234, dworthy@csc.noaa.gov.

Coastal Remote Sensing Program. Contact John Brock at 803/974-6239, jbrock@csc.noaa.gov.

Integration and Development Program. Contact Miki Schmidt at 803/974-6237, mschmidt@csc.noaa.gov.

Coastal Management Fellowship Program. Contact Paul M. Scholz at 803/974-6208, pscholz@csc.noaa.gov.

Coastal Training Institute Program. Contact Jennet Robinson Alterman at 803/974-6210, jralterman@csc.noaa.gov.

Special Projects Program. Contact Paul M. Scholz at 803/974-6208, pscholz@csc.noaa.gov.

Detailed guidelines for the above program areas include details for the technical program, evaluation criteria, selection procedures, and the standard NOAA application forms.

The goal of the Coastal Services Center is to build capabilities throughout the nation which simultaneously address pressing issues of coastal health and change by conserving coastal environments, including coastal wetlands, riparian forested wetlands, maritime forests, fisheries/shell fisheries, and other living marine resources, and by promoting efficient and sustainable industry, farming, commercial and residential development, urban redevelopment, and tourism.

For general information about the Coastal Services Center contact Violet Legette, NOAA Coastal Service Center, 2234 South Hobson Avenue, Charleston, SC 29405-2413; 803/974-6222, vlegette@csc.noaa.gov.

■ U.S. Information Agency College and University Affiliations Program

The Office of Academic Programs of the United States Information Agency's Bureau of Educational and Cultural Affairs announces an open competition for an assistance award program. Accredited, post-secondary educational institutions may apply to develop partnerships with foreign institutions of higher education in specified fields and themes within the humanities and social sciences. Awards will be made to support democratic institution-building and/or civic education.

Participating institutions exchange faculty and administrators for a combination of teaching, lecturing, faculty and curriculum development, collaborative research, and outreach, for periods ranging from a week (for planning visits) to an academic year. The program will also support the establishment and maintenance of Internet and/or e-mail communication facilities as well as interactive distance learning programs at foreign partner institutions.

The program awards up to \$120,000 for a three-year period to defray the cost of travel and per diem with an allowance for educational materials and some aspects of project administration.

The application deadline is **January 16, 1998**. A copy of the announcement is available from ORTTA and may be requested by calling Therese Graner at 624-7021, or by sending a request to gopher@ortta.umn.edu. Prospective applicants are requested to read the complete Federal Register announcement before making inquiries or submitting proposals. For further information contact the Office of Academic Programs, College and University Affiliations Programs (E/ASU), Room 349, U.S. Information Agency, 301 4th Street, SW, Washington, DC 20547; 202/619-5289, fax 202/401-1433, affiliat@usia.gov. The entire solicitation may be downloaded from USIA's web page at <http://www.usia.gov/education/rfps>. Refer to the solicitation number E/ASU-98-02.

A second solicitation, E/ASU-98-03 has also been announced, for the College and University Affiliations Program to support free trade and market economics, and/or the environment and sustainable development. The deadline date and contact points are the same as the above.

■ National Science Foundation Life in Extreme Environments

The National Science Foundation (NSF) is inviting proposals to explore the relationships between organisms and their environments, with strong emphasis on life-supporting environments near the extremes of planetary conditions—from volcanoes to polar ice. Research will be supported on microbial systems, including studies to discover, quantify, culture, and preserve microorganisms from extreme environments; research on the diversity, ecology, physiology, biochemistry, genetics, and evolutionary history of microbes from extreme environments; and paleobiological studies of microbial life on Earth.

Applicants should couple research on a topic covered by the solicitation with development and application of methods to isolate and culture microbes found in extreme environments; methods to study these microbes in their natural habitats; technologies for non-contaminating sample recovery; sensors capable of probing extreme environments; methods to study ancient microbial life and paleo-environmental conditions on Earth; and techniques for studying other planets.

\$6 million is available to fund about 20 awards for periods of two to five years. *NSF has identified this program as a priority area for next year and beyond.*

The application deadline is **January 15, 1998**. The announcement is online at <http://www.nsf.gov>. Click on "documents" and search by the document number NSF 97-157.

■ U.S. Department of Education Visiting Scholars Fellowship Program

The U.S. Department of Education, Office of Educational Research and Improvement (OERI) has released a combined notice for the Visiting Scholars Fellowship Program. The program allows individuals engaged in educational research to work at one of the following OERI national research institutions in Washington, D.C., for up to 18 months.

1. National Institute on Student Achievement, Curriculum, and Assessment (CFDA 84.305V)
2. National Institute on the Education of At-Risk Students (CFDA 84.306V)
3. National Institute on Early Childhood Development and Education (CFDA 84.307V)

{next column}

4. National Institute on Educational Governance, Finance, Policy-Making, and Management (CFDA 84.308V)

5. National Institute on Postsecondary Education, Libraries, and Lifelong Learning (CFDA 84.309V)

Eligible applicants include scholars, researchers, policymakers, education practitioners, libraries, or statisticians who are engaged in the use, collection, and dissemination of information about education and educational research. One to two awards will be made to each institute.

The application deadline is **January 5, 1998**. A complete copy of the announcement is available from ORTTA and may be requested by calling Therese Graner at 624-7021 or leaving a message at gopher@ortta.umn.edu. The announcement may be accessed electronically in text or portable document format (pdf) at either of two web sites: <http://ocfo.ed.gov/fedreg.htm> or <http://www.ed.gov/news.html>. To use the pdf you must have the Adobe Acrobat Reader Program with Search, which is available free at either of the sites. If you have questions about using the pdf, call the U.S. Government Printing Office, toll free, at 888/293-6498.

■ U.S. Department of Education Direct Grant Programs and Fellowship Programs

The U.S. Department of Education has released a notice identifying programs and competitions under which it plans to invite applications for new awards for FY 1998, including the actual or estimated deadline dates for transmittal of applications. It also includes the address and telephone numbers for obtaining an application for, or further information about, an individual program, and the estimates of amounts of funds that will be available for these programs based on the President's FY 1998 budget request. The notice has been published in order to give potential applicants adequate time to prepare applications.

The announcement may be accessed electronically in text or portable document format (pdf) at either of two web sites: <http://ocfo.ed.gov/fedreg.htm> or <http://www.ed.gov/news.html>. To use the pdf you must have the Adobe Acrobat Reader Program with Search, which is available free at either of the sites. If you have questions about using the pdf, call the U.S. Government Printing Office, toll free, at 888/293-6498.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	353	\$ 78,668,756
Awards Processed		
September 1997	307	44,303,346
Proposals Submitted		
July 1997 - September 1997	901	173,470,351
Awards Processed		
July 1997 - September 1997	861	103,723,793
Proposals Submitted		
July 1996 - September 1996	864	143,412,316
Awards Processed		
July 1996 - September 1996	906	91,435,222

Center for Spirituality and Healing

Mary J. Kreitzer, Hospital and Clinic

Arthur Vining Davis Foundation
\$159,159 - 7/1/97-2/28/99

Role of Frizzled Receptors in Embryogenesis

Stephen C. Ekker, Biochemistry, Medical School

NIH, NIGMS
\$183,848 - 9/1/97-8/31/98

Development of Patterned Visual Connections in the Brain

Steven McLoon, Cell Biology and Neuroanatomy

NIH, NEI
\$138,940 - 7/1/97-6/30/98

Streptococcal Inactivator of Human Chemoattractants

Paul P. Cleary, Microbiology

NIH, NIAID
\$168,748 - 9/1/97-8/31/98

Control of Cell Motility

Paul Sammak, Pharmacology

NIH, NIGMS
\$122,900 - 9/1/97-8/31/98

Perturbations in Vitamin B6 Metabolism in Cancer

Louise M. Nutter, Pharmacology

NIH, NCI
\$100,000 - 9/15/97-9/14/99

Calcium Regulation Systems in Sea Urchin Eggs

Hon Cheun Lee, Physiology

NIH, NICHD
\$251,520 - 7/1/97-6/30/98

Molecular, Clinical, and Epidemiologic Correlates of Nonmelanoma Skin Cancer

Sagarika Kanjilal, Dermatology

Vivek Kapur, Veterinary Pathobiology

Minnesota Medical Foundation
\$9,975 - 9/1/97-8/31/98

Research Training in Medical Informatics

Lael C. Gatewood, Laboratory Medicine and Pathology

NIH, NLM
\$495,379 - 7/1/97-6/30/98

The Role of Beta-1 Integrins and Hematopoietic Progenitors Engraftment

Catherine M. Verfaillie, Medicine

NIH, NIDDK
\$250,001 - 9/1/97-8/31/98

Coronary Vascular Response to Ischemia

Robert J. Bache, Medicine

NIH, NHLBI
\$231,056 - 7/1/97-6/30/98

Role of Integrins in Alveolar Reepithelialization

Hyun J. Kim, Medicine

David H. Ingbar, Medicine

James B. McCarthy, Laboratory Medicine and Pathology

NIH, NHLBI
\$84,780 - 7/15/97-6/30/98

Treating Autoimmune Arthritis with Stem Cell Transplantation

Ronald P. Messner, Medicine

Minnesota Medical Foundation
\$7,000 - 8/1/97-7/31/98

Breast Cancer Expression of NK Cell Recognition Molecules

Linda J. Burns, Medicine

Minnesota Medical Foundation
\$6,000 - 9/1/97-8/31/98

Encoding Reach and Grasp in Cerebellar Neuronal Activity

Carolyn Mason, Neurosurgery

Timothy Ebner, Neurosurgery

NIH, NINDS
\$25,420 - 9/1/97-8/31/98

Calcium Imaging in Retinal Cells

Susan A. Keirstead, Ophthalmology

Minnesota Medical Foundation
\$15,000 - 8/1/97-7/31/98

Ultrastructure of Extracellular Matrix to Rodent Cochlea

Vladimir L. Tsuprun, Otolaryngology

Peter A. Santi, Otolaryngology

NIH, NIDCD
\$36,300 - 8/1/97-7/31/98

Influence of Inactivity and Exercise on Single Muscle Fibers

Ladora V. Thompson, Physical Medicine and Rehabilitation

Foundation for Physical Therapy
\$60,058 - 7/1/97-6/30/98

Evaluation of the Efficacy and Safety of a Transdermal Delivery System of Nocitine/Mecamylamine in Cigarette Smokers

Dorothy Hatsukami, Psychiatry

Sharon S. Allen, Family Practice and Community Health

Sano Corp.
\$258,887 - 2/18/97-2/17/98

Neural Correlates of Emotion

David H. Zald, Psychiatry

Jose V. Pardo, Psychiatry

NIH, NIMH
\$24,292 - 7/1/97-6/30/98

Pre-Clinical Assessment of Coronary Artery Prosthesis

Richard W. Bianco, Surgery

Bio-Vascular Inc.
\$289,389 - 1/1/97-12/31/98

Monitoring the Access to Care and Health Status of Low Income Populations

Nicole Lurie, Health Services Research

Commonwealth Fund
\$150,282 - 5/1/97-12/31/97

Preventing Alcohol Sales to Minors

Alexander C. Wagenaar, Epidemiology

NIH, NIAAA
\$463,232 - 9/1/97-8/31/98

Community Initiatives to Limit Teenage Access to Tobacco

Jean L. Forster, Epidemiology

NIH, NCI
\$310,389 - 9/16/97-6/30/98

Genetic-Epidemiology of Breast-Prostate Cancer

Thomas A. Sellers, Epidemiology

NIH, NCI
\$232,805 - 7/18/97-6/30/98

Center for Managed Care

John Kralewski, Health Services Research

Bush Foundation
\$154,552 - 7/1/97-6/30/99

Effect of a Morphine Tapering Algorithm in Bone Marrow Transplant Patients

Carol Pederson, Nursing

Leslie Parran, Nursing

NIH, NCNR
\$108,768 - 8/1/97-1/31/00

Breastfeeding and Weaning Practices of Urban Ojibwe Women

Joan E. Dodgson, Nursing

Sigma Theta Tau, Inc.
\$3,000 - 7/1/97-6/30/98

The Biobehavioral Etiology of Chronic Temporomandibular Disorders (TMD)

James R. Friction, Diagnostic Surgical Science

Jana L. Wagner, Diagnostic Surgical Science

John O. Look, Diagnostic Surgical Science

NIH, NIDR
\$186,399 - 9/1/97-6/30/98

Development Expression and Biochemical Basis for Polysaccharide Storage Myopathy in Quarter Horses

Stephanie Valberg, Clinical and Population Sciences

James R. Mickelson, Veterinary Pathobiology

Melissa Hower, Clinical and Population Sciences

American Quarter Horse Association
\$29,501 - 10/1/97-9/30/98

Persistent Activity of Doramectin Injectable Against Lungworm

Bert E. Stromberg, Jr., Veterinary Pathobiology

Brent Woodward, Animal Science

Gary A. Averbeck, Veterinary Pathobiology

Pfizer Inc., Animal Health Group
\$71,284 - 7/1/97-6/30/98

Development of Exertional Rhabdomyolysis in Thoroughbreds

Esther M. Gallant, Veterinary Pathobiology

Stephanie Valberg, Clinical and Population Sciences

James R. Mickelson, Veterinary Pathobiology

Morris Animal Foundation
\$57,086 - 9/1/97-8/31/98

Control of Viral Respiratory Diseases of Turkey

David A. Halvorson, Veterinary Pathobiology

Kakambi V. Nagaraja, Veterinary Pathobiology

Midwest Poultry Consortium, Inc.
\$36,349 - 7/1/97-6/30/98

Structure and Mechanism of L-Keto Acid-Dependent Enzymes

Eric L. Hegg, Chemistry

Lawrence Que, Jr., Chemistry

NIH, NIGMS
\$25,420 - 9/1/97-8/31/98

Single Molecule Fluorescence Resonance Energy Transfer (FRET) Study of the HIV NCp7/tRNA System

Kristin Weidemaier, Chemistry

Paul F. Barbara, Chemistry

NIH, NIGMS
\$24,292 - 9/1/97-8/31/98

Inverters for High-Performance Induction-Motor Drives

Ned Mohan, Electrical Engineering

Custom Servo Motors Corp.
\$71,560 - 9/1/97-8/31/98

Innovations in Power Engineering Education

Bruce F. Wollenberg, Electrical Engineering

Ned Mohan, Electrical Engineering

William P. Robbins, Electrical Engineering

Electric Power Research Institute
\$60,000 - 9/8/97-12/31/99

Compound Dielectric for 0.1 Micron FETs

Stephen A. Campbell, Electrical Engineering

Wayne L. Gladfelter, Chemistry

Semiconductor Research Corp.
\$21,117 - 9/1/97-10/31/97

County Geologic Atlas and Regional Hydrogeologic Assessment

David L. Southwick, Geology and Geophysics

St. of Minn., Department of Natural Resources
\$800,000 - 7/1/97-6/30/99

Collaborative Research: Continental Ostracode and O-Isotope

Emi Ito, Geology and Geophysics

National Science Foundation
\$105,437 - 9/15/97-8/31/98

Shear Deformation of Upper Mantle Minerals

Shun-Ichi Karato, Geology and Geophysics

National Science Foundation
\$100,785 - 9/1/97-8/31/98

Council on Energy Engineering Research

Richard J. Goldstein, Mechanical Engineering

U.S. Department of Energy
\$173,503 - 7/1/97-6/30/98

Regime-Based Correlations for Boiling Crisis in Pipe Flow

Avram Bar-Cohen, Mechanical Engineering

Electric Power Research Institute
\$99,000 - 9/8/97-6/30/98

Advanced Kinetic Methods for Efficient Plasma Modelling

Uwe R. Kortshagen, Mechanical Engineering

National Science Foundation
\$80,750 - 9/1/97-8/31/98

A Probabilistic Framework for Assessment and Interpretation of Quantitative Precipitation Forecasts from Storm-Scale Models

Efi Foufoula, St. Anthony Falls Laboratory

National Science Foundation
\$106,739 - 9/1/97-8/31/98

Phylogeographic Consequences of Different Paleoclimatic Histories in Eurasian and North American Avifaunas

Robert M. Zink, Bell Museum of Natural History

National Science Foundation
\$120,000 - 8/15/97-7/31/99

Growth and Protein Expression of Eukaryotic Cells

Friedrich Srenc, Biological Process Technology Institute
National Science Foundation
\$117,293 - 9/1/97-8/31/98

Function of the UNC-7 Family Proteins in *C. elegans*

Jocelyn E. Shaw, Genetics and Cell Biology
NIH, NIGMS
\$185,159 - 9/1/97-8/31/98

Max Workshop: Academics and the Arts

Thomas L. Trow, College of Liberal Arts
Minnesota Center for Arts Education
\$13,000 - 3/1/97-9/1/97

A Bayesian Approach to Markov Mixtures with Applications in Finance

Merrell Hora, Economics
Alfred P. Sloan Foundation
\$20,600 - 7/1/97-8/31/98

FY 1998 Economic Reports and Forecasts

Thomas Stinson, Applied Economics
St. of Minn., Department of Finance
\$55,416 - 7/1/97-6/30/98

Biological Control of Pests

Mark E. Ascerno, Entomology
St. of Minn., Department of Agriculture
\$308,350 - 9/1/97-6/30/99

Reducing Pollution Through a Paired Watershed Technique

John Moncrief, Soil, Water, and Climate
Satish C. Gupta, Soil, Water, and Climate
Metropolitan Council of the Twin Cities
\$138,000 - 1/1/97-12/31/97

Urban Landscapes as a Source of Phosphorus

Carl J. Rosen, Soil, Water, and Climate
Terence Cooper, Soil, Water, and Climate
Metropolitan Council of the Twin Cities
\$23,082 - 7/30/97-8/31/98

Utilization of Municipal Solid Waste Compost

Thomas R. Halbach, Soil, Water, and Climate
Alfredo Dicostanzo, Animal Science
Western Lake Superior Sanitary District
\$15,000 - 8/22/97-2/15/98

Elucidating the Precise Chemical Composition of a Pheromonal Signal and Determining Whether it is Discriminated by a Specific, Specialised Component of the Goldfish Olfactory System

Peter Sorensen, Fisheries and Wildlife
National Science Foundation
\$105,619 - 9/1/97-8/31/98

Producing a True Lignin Depolymerase for Biobleaching Softwood Kraft Pulp

Simo Sarkanen, Wood and Paper Science
U.S. Department of Energy
\$150,000 - 7/28/97-7/27/98

Optimal Permanent Placements for Young Children in Foster Care

Esther F. Wattenberg, Social Work
McKnight Foundation
\$150,000 - 9/16/97-3/15/99

Support for Board for International Food and Agricultural Development (BIFAD) Activities

G. Edward Schuh, Humphrey Institute
U.S. Department of Agriculture
\$59,400 - 8/15/97-8/30/98

Community Organizer Training Program

Jay Clark, Urban and Regional Affairs
Minneapolis Neighborhood Revitalization Program
\$14,743 - 6/1/97-5/31/98

Impact of the Keweenaw Current on Cross-Margin Transport in Lake Superior

Erik T. Brown, Large Lakes Observatory
Elise A. Ralph, Large Lakes Observatory
National Science Foundation
\$269,416 - 9/15/97-8/31/98

Acquisition of an Instrument Package for Great Lakes Research

Nigel Wattrus, Large Lakes Observatory
Elise A. Ralph, Large Lakes Observatory
Thomas C. Johnson, Large Lakes Observatory
National Science Foundation
\$238,102 - 9/15/97-8/31/99

Potassium Channel Expression in Cochlear Nucleus

Janet Fitzakerly, Medicine, Duluth
NIH, NIDCD
\$123,734 - 9/1/97-8/31/98

Lake Superior Decision Support System

George E. Host, Natural Resources Research Institute, Duluth
Lucinda Johnson, Natural Resources Research Institute, Duluth
Carl Richards, Natural Resources Research Institute, Duluth
St. of Minn., Department of Natural Resources
\$514,619 - 8/6/97-9/30/00

Alternative Sewage Treatment Demonstration Project Phase IV

Barbara J. McCarthy, Natural Resources Research Institute, Duluth
Iron Range Resources Rehabilitation Board
\$20,000 - 7/31/97-6/30/98

Anyang Project: Co-evolution of Human Societies and Landscape

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
Zhichun Jing, Archaeometry Laboratory, Duluth
Henry Luce Foundation, Inc.
\$50,000 - 9/1/97-8/31/00

Breast Cancer Stimulation of Osteolysis

Merry Jo Oursler, Biology, Duluth
USDoD, Army
\$293,321 - 9/1/97-9/30/00

Intra/Inter-Regional Linkage Grant

Linda Deneen, Information Services, Duluth
St. of Minn., Higher Education Coordinating Board
\$469,073 - 8/18/97-6/30/99S

Corrections:***Epilepsy in the Elderly: Epidemiologic and Pharmacologic Aspects***

Ilo Leppik, Minnesota Comprehensive Epilepsy Program
James Cloyd, School of Pharmacy
NIH, NINDS
\$4,507,749 - 7/15/97-5/31/02

Women Entrepreneurs Telecommunications and Technology Network

Jerry Nagel, Chancellor's Office, Crookston
Sue Brorson, Management, Crookston
Northwest Minnesota Foundation
\$30,000 - 7/01/97-6/30/98

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>

	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. Med., some DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
DHHS (NIH, etc.), US Ed, business/industry (HS except Med. Sch.)	Kevin McKosky	624-1521	kevin@ortta.umn.edu
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
.	Liz Li	624-0810	liz-l@ortta.umn.edu
USDI (Non-IT), St. of Minn, DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	TBA	624-5571	@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
.	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed.	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	TBA	625-1359	andy@ortta.umn.edu
NSF (non-IT), MnDOT	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

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(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

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TEL: 612-625-5300
FAX: 612-625-5301

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RESEARCH REVIEW

Office of Research and Technology Transfer

December 1997

Political Scientist Sees Land Mines Going the Way of Chemical Weapons

To the campaign to ban land mines, Richard M. Price brings long study of the other modern weapons ban—the ban on chemical weapons, which has held pretty securely since World War One.

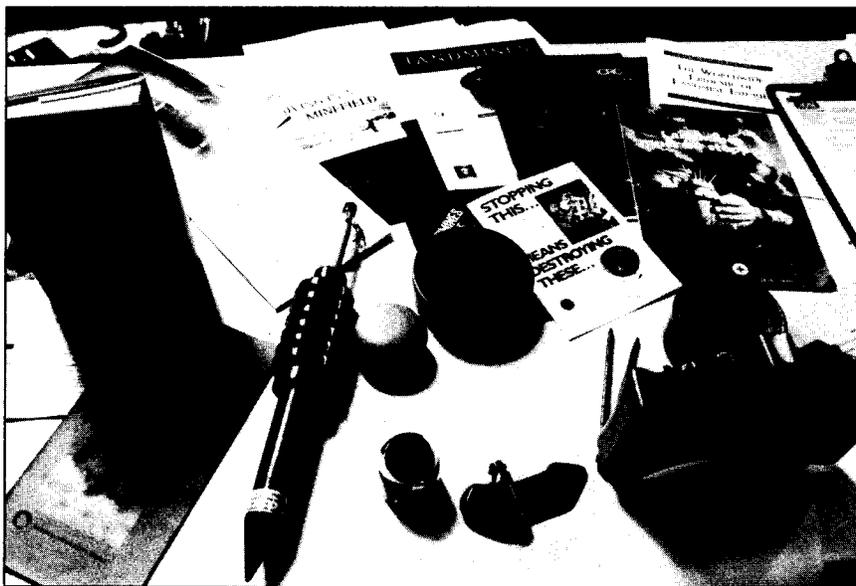
“Iraq appears *not* to have used chemical weapons during the Gulf War, though it had the capability,” Price said on November 3, when the current dispute over weapons inspections was just beginning. “During World War Two, the Nazis and the Allies had chemical bombs loaded and ready, and chemicals would have been an ideal weapon for the U.S. in the battle for the Pacific islands. The ban on chemical weapons has held to an astonishing degree since then, with the exception of the Iran-Iraq war, when Iraq used chemicals, and maybe the 1960 Egypt-Yemen conflict.”

Why? asks Price. “Why the chemical weapons and not others? For years I’ve been trying to wrap my head around that question.” Understanding why the taboo on chemicals has held so well will help the campaign to ban land mines, Price hopes. The current campaign against land mines would not have succeeded as it has, he suspects, without the chemical weapons precedent.

Price, McKnight Land Grant Professor in political science, spoke of the matter during the “Unparalleled Minds” faculty research fair in Coffman Union on November 3.

Price finds at least three reasons why chemical weapons have gone unused:

The chemical ban worked because the world’s abhorrence of such weapons had a long time to develop. “The Hague Dec-



Land mines—or rather wooden models of land mines—illustrated Richard Price's description of what the campaign to ban land mines might learn from the history of chemical weapons.

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 6

December 1997

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%

Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.



Mary Kay Harris cares for the Foundation Center Cooperating Collection at the Minneapolis Public Library.

Largest Library of Funding Info is at Minneapolis Public

For information about who's got grant money and how to get it, the single largest collection around is on the second floor of the Minneapolis Public Library. "We know it's the largest in the state," says Mary Kay Harris, the librarian who runs the collection, "and maybe the largest in the Midwest."

The Foundation Center Cooperating Collection, as it's called, contains about 700 volumes altogether. It chiefly serves nonprofit organizations; it is particularly suited to helping patrons learn about Minnesota foundations; and it has about 120 reference works regarding undergraduate, graduate, and postgraduate scholarship opportunities.

The collection's chief source for electronic searches is *FCSearch*, a database on CD that provides brief profiles of some 43,000 funders—agencies, foundations, corporations, individuals—and describes details regarding about 115,000 of the grants they've made. If you search for, say, grants made to Minnesota organizations in 1995 and '96 and having to do with journalism, the results tell you that the Cowles Media Foundation gave \$24,000 to the Minnesota Center for Book Arts; the Mellon Foundation gave \$400,000 to Graywolf Press; the Lilly Endowment gave \$170,000 to Saint Johns Abbey; and the Ford Foundation gave \$80,000 to the Native American Journalists Association—and there are 32 other grants in the list.

The point of such a list is what it tells a prospective nonprofit publisher about who funds such work. For grant

seekers phoning her from outside the Cities, Harris will perform a search like that and mail the results.

It's not good to rely on the easy electronic directories, however, warns Harris, especially not if you're looking for local money in small amounts, and especially not if you are new to the business and don't have a lot of credentials to show a prospective funder. That electronic *FCSearch*, she points out, lists only grants of more than \$10,000, and only grants to organizations, never individuals. So "We encourage people to supplement an electronic search with paper sources."

There's the *Minnesota Foundation Directory*, eight pounds of loose leaf pages that will tell you who to call at each foundation and in many cases what their guidelines are for grant requests. It also lists all the grants those Minnesota foundations made in a given year, so you can learn what kind of organizations they fund for what kind of work.

In the collection's filing cabinets, there are annual reports from 200 foundations and 500 nonprofit organizations—from the Alliant Tech Systems Foundation to the Weyerhaeuser Family Foundation, from Abbot Northwestern Hospital to the Minneapolis YWCA. For small foundations that don't publish annual reports, the collection has tax returns.

Suppose a likely sponsor for a given project is a private corporation with no formal foundation and little public

{continued on next page}

record. Persistent searching through the collection may tell you who at the company runs the giving program, then help you learn what charities and philanthropies that person is active in. "That's how you find out what the person's into," Harris says.

Because about 80 percent of U.S. philanthropy comes from individuals, not foundations or corporations, the foundation collection includes the directory *Who's Wealthy in America*. Because it is particularly difficult to find grant makers who will support individuals working independently, the collection includes *Foundation Grants to Individuals 1997*.

For students and academics, there are *The Grants Register 1997: The Complete Guide to Postgraduate Funding Worldwide* and the *ARIS Funding Reports*, which are monthly digests of requests for proposals (*ARIS* is the Academic Research Information System).

For local work, the *Local/State Funding Report* provides weekly news of national programs and federal block grants for local governments and communities.

And of course there's huge national directories of grant funding. The *Foundation Grants Index*, for example, is the Britannica of who gave how much to whom for what kind of work. Over 2,300 pages, it arranges descriptions of 74,000 recent grants according to broad subject categories, and ends with a more-precise subject index.

That means you can look for science and technology grants by Minnesota organizations and learn that the Medtronic Foundation provided the YWCA of St. Paul with \$20,000 for science education, and 3M supplied the American Indian Science and Engineering Society with \$10,000 for minority education. So if you're looking to persuade a foundation to pay for some science education, those might be two good places to start.

"The exciting, fun part is that because it's a reference collection I don't have to worry so much about how often something is used," says Harris. "It's really gratifying to have just the book someone needs, even if it's only used once or twice a year."

The core of the Minneapolis foundation collection comes from the Foundation Center, a nonprofit organization headquartered in New York. The relationship is similar to that between the federal government and a federal document library. The Minneapolis library supplements that core collection with an acquisition pro-

gram of \$10,000 to \$12,000 per year. It also works closely with the public libraries in Fargo, Duluth, and Rochester.

The foundation collection is a part of the Minneapolis Library's Sociology Department. Renee Reed, the department head, describes three reasons for keeping the foundation collection a priority: One, "With respect to reference resources, this is one of the best public libraries between the West Coast and Chicago," she says, and the foundation collection is a part of that broader commitment to reference collections. Two, because the Twin Cities have such a strong tradition of philanthropy, it makes sense for the library to serve the philanthropic community. Three, "it is one of the most-frequently used collections in the library," says Reed. "You seldom see it without someone there using it."

To introduce new users to the collection, Harris provides a brief presentation every other Friday morning, starting at 10:30. But phone first—612/630-6300—because the schedule is not consistent.

The Minneapolis Public Library is at the north end of Nicollet Mall, between the river and the downtown shopping district. It is open till 9:00 PM, Monday through Thursday, and 5:30 PM Friday and Saturday. The foundation collection is on the second floor, next to the sociology reference desk.

by Phil Norcross

The Foundation Center Cooperating Collection, Sociology Department, Minneapolis Public Library, holds reference works under the following topics:

- National Directories
- State Directories
- People of Wealth
- Corporate Philanthropy
- Minnesota Philanthropy
- Special Subject Directories
 - [works devoted to, for example, humanities, law enforcement, and rural health]
- Federal Funding
- International Philanthropy
- Scholarships
- Research and Proposal Writing
- Fundraising Other than Grants
- Nonprofit Management
- Foundation Management
- Charity Statistics

Environmental Health and Safety

Selected Biological Materials Require CDC Registration

Transfer of select viral, bacterial, and fungal agents as well as certain toxins and rDNA materials must comply with the complete documentation and registration requirements contained in a new federal regulation.

Public Law 104-132, "The Antiterrorism and Effective Death Penalty Act of 1996," requires that the transfer of select agents be regulated. The Centers for Disease Control and Prevention (CDC) has implemented a registration process for certifying facilities as described in 42 CFR 72, "Additional Requirements for Facilities Transferring or Receiving Select Agents."

Researchers will be unable to transfer or receive any of the select agents without an institutional registration number issued by CDC. Any researchers at the University of Minnesota who are using any of the select agents listed below are asked to contact the University Biosafety Officer, Jim Lauer (612/626-5621), so that the University may begin the registration process on their behalf. There are some exemptions for certain uses of these agents. Contact the Biosafety Officer for more information.

Select Agents

(from Appendix A to 42 CFR Part 72)

Viruses

1. Crimean-Congo haemorrhagic fever virus
2. Eastern equine encephalitis virus
3. Ebola viruses
4. Equine morbillivirus
5. Lassa fever virus
6. Marburg virus
7. Rift Valley fever virus
8. South American haemorrhagic fever viruses (Junin, Machupo, Sabia, Flexal, Guanarito)
9. Tick-borne encephalitis complex viruses
10. Variola major virus (Smallpox virus)
11. Venezuelan equine encephalitis virus
12. Viruses causing hantavirus pulmonary syndrome
13. Yellow fever virus

Bacteria

1. *Bacillus anthracis*
2. *Brucella abortus*, *B. melitensis*, *B. suds*
3. *Burkholderia (Pseudomonas) mallet*
4. *Burkholderia (Pseudomonas) pseudomallei*
5. *Clostridium botulinum*
6. *Francisella tularensis*
7. *Yersinia pestis*

Rickettsiae

1. *Coxiella burnetii*
2. *Rickettsia prowazekii*
3. *Rickettsia rickettsii*

Fungi

1. *Coccidioides immitis*

Toxins

1. Abrin
2. Aflatoxins
3. Botulinum toxins
4. *Clostridium perfringens* epsilon toxin
5. Conotoxins
6. Diacetoxyscirpenol
7. Ricin
8. Saxitoxin
9. Shigatoxin
10. Staphylococcal enterotoxins
11. Tetrodotoxin
12. T-2 toxin

Recombinant organisms/molecules

1. Genetically modified microorganisms or genetic elements from organisms on the select agent list shown to produce or encode for a factor associated with a disease.
2. Genetically modified microorganisms or genetic elements that contain nucleic acid sequences coding for any of the toxins listed or their toxic subunits.

By Jim Lauer, UM Biosafety Officer



Sponsored Projects Administration

Frequently Asked Questions About Sponsored Projects

Question: Why does it take so long to get an account number on a new award?

Answer: An account number cannot be assigned until the University has an acceptable award agreement whereby the sponsor promises to pay the costs associated with a given project.

In most cases, like federal grants, the sponsor's terms are standard and generally always acceptable, and the account number is usually assigned within 48 hours of receipt at ORTTA.

However, in the last few years the University has seen dramatic growth in the number of awards coming from nontraditional sponsors, such as business and industry, state and local governments, and associations. Such organizations don't always have policies or procedures to make awards for sponsored activity. These awards tend to be bilateral agreements which must be negotiated, and both parties (and often the PI) must sign. This takes time, frustratingly, *after* the decision by the sponsor to fund the project.

Other reasons account numbers, or award set-ups, can be delayed:

- Not submitting the proposal and BA23 (as often happens with the nontraditional organizations mentioned above).
- The sponsor's award notice going directly to the PI or department. This usually happens when the proposal hasn't gone through the University so the sponsor doesn't know to send the award to ORTTA.
- Lack of a translation from the proposed budget to CUFS objects.
- Lack of match/cost-sharing details.
- SPA staff being occupied with major proposal deadlines.

ORTTA is working with some of the nontraditional sponsors to negotiate standard terms or master agreements that would minimize negotiation time. Departments and PIs can have a positive influence by submitting proposals through the University process with as much information as is known at the time. In the future the University's EGMS project should cut down on delays by allowing information from the proposal to electronically flow into award databases and the financial system—things that must now be done manually to establish an account.

Question: Why is it so difficult to get pre-award numbers assigned to all accounts?

Answer: The federal government has made provisions on selected grants to reimburse grantees for pre-award expenses. Because most awards to the University are federal grants the pre-award option has become popular. With other sponsors the decision to incur expenses prior to the award must take into consideration the sponsor's award process. For example, awards from State of Minnesota agencies are subject to a State Statute which prohibits them from reimbursing us for any expenditures incurred prior to the last date of signature by the state on the contract. In other cases, there may be terms in the agreement the University or PI cannot accept which kills the deal. If we've already spent money we can't collect from the sponsor.

If it seems that ORTTA is making it difficult, that is because we have a responsibility to the PI, department, and University not to put ourselves at risk.

Question: Why do we have to specify objects, and provide explanations, on pre-award requests? SPA normally doesn't request additional information when establishing a normal account, so why are there more stringent guidelines for pre-award accounts?

Answer: When the federal government gave grantees the authority to incur costs prior to the award it required that the University develop a procedure that meets agency criteria. Some criteria which agencies have articulated are as follows:

- Costs incurred must be considered necessary for the conduct of the project.
- The costs must be allowable under the potential award.
- Advance funding must be necessary for the effective and economical conduct of the project.

If the PI has determined there is a need to incur costs early, it follows that she or he must have some idea what costs are necessary for the work. Requiring a reason for the request and specifying the objects provides assurance that the request has been considered carefully. Comparing the request to the proposal budget and justification allows a determination whether the costs are allowable under the potential award.

When setting up a normal award we know from the proposal what objects are necessary and funding is assured. It's important to remember that pre-award spending is done with University funds; there are no guarantees we will be reimbursed. It would be irresponsible to open all objects and allow unlimited spending, putting University funds at risk, unless the department were willing to fund the entire project.

by Todd Morrison, SPA

Grants Management Project

Investigators Test the Electronic Grants Management System

Results indicate lots of promise and a few bugs

David Hamilton, professor in Cell Biology and Neuroanatomy, says he is high—"very high"—on the University's Electronic Grants Management System (EGMS). "I think when it's fully implemented it will be an extraordinary aid to people putting in grant proposals."

Hamilton studies the cell biology of fertilization. He used EGMS last summer to create a research proposal to the NIH. The chief advantage, according to Hamilton, was EGMS supplying numbers—fringe benefit rates and indirect cost rates for example—and saving Hamilton the trouble of looking them up. In addition, "I didn't have to calculate my budget out over five years. EGMS did that automatically," he says.

EGMS helped Hamilton create a proposal for the NIH; he looks forward to when it will help him create and send around for signature the University's Proposal Routing Form (formerly known as a "BA23"), which means that piece of red tape will no longer be a chore, according to Hamilton. "In the past, you spent hours or days on the BA23. You had to contend with all sorts of delays," he says. "Now that won't occur."

Hamilton is not just any test subject for the EGMS. His chief role as a member of the University's Grants Management Committee has been to oversee the development of EGMS. For the system's success, he chiefly credits Winifred Schumi and Susan Stensland of ORTTA and the Sponsored Project Administration, along with the programmers who created the FormsNirvana system. "They deserve enormous credit," he says.

Mendel Tuchman and Lisa Sheehy, professor and office specialist in pediatrics, are confident EGMS will work eventually; "it has to," as Tuchman puts it. On the other hand, when they tried to prepare an NIH proposal with EGMS in October, they grew frustrated with some of its inflexibilities, chiefly their lack of control over format and typography.

"On the surface it looked ready," says Tuchman. "But there are several bugs. There are several things that this system cannot do—yet."

When they pasted a bloc of text into EGMS from a word processor, for example, every occurrence of *E. coli* changed to E. coli; Tuchman, M. in the bibliography changed to Tuchman, M.; all type faces changed to courier; α , became a3. The EGMS would not allow Sheehy to move line spaces from one item in a form to the next, nor would it let her control page breaks.

Tuchman and Sheehy like lists with hanging indentations. EGMS couldn't do that. Nor does it provide a spell-checker. And once Sheehy put the proposal into EGMS documents, she found it difficult to edit or change. A bibliography has to be edited one item at a time, for example, rather than calling up a whole page for changes.

These may seem like petty details, Tuchman acknowledges, but he argues that in fact they do matter. "Over the years I have thought about how to best present this thing," he says, "both from the perspective of somebody who writes grants and somebody who reviews them." The years have taught Tuchman that "when a reviewer gets tired from reading your proposal, you're lost."

To get the bugs fixed, Tuchman suggests someone from the EGMS development team go to investigators and input proposals for them. "Then you'll learn what the bugs are and they will get fixed. Call it field testing."

Kevin Haroian got around the format and typography bugs by using EGMS to produce the forms and budgets of two proposals in October, and inserting blank pages where the text-intensive portions belonged. Then he produced the text with his word processor and shuffled the two together after they were printed on paper.

Haroian, an administrative director with one of the psychology department's twins studies, sent two proposals to the NIH in October—one having to do with alcoholism, the second with other kinds of substance abuse. They both amount to about \$3.5 million over 5 years.

"It's a lot of work to get all the numbers in those proposals," he says, referring to inflation rates, graduate student tuition rates, rates for this, rates for that. "In the past I used spreadsheets and a word system, but they would never get the numbers right without a lot of last-minute, late-night corrections. For example, the inflation rate is now 3 percent, but it used to be 4 percent and that's the number I'd use."

Because it keeps track of all the rate changes, EGMS avoids such errors.

"It needs some work," says Haroian, and he brings up the you're-stuck-with-one-font problem. Also "we need to work out a better system for moving lines—currently you can only add one at a time. And when you add a new item to a list, EGMS always puts it at the bottom." He'd like citations sorted better, too.

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Land Mines

{continued from page 1}

laration of 1899 institutionalized an incipient norm against gas weapons before they were invented," Price writes in his 1997 book. *

The chemical ban worked because nations are happy to outlaw weapons that would easily serve terrorists and insurgencies, while their official militaries keep the weapons over which they enjoy a monopoly—tanks for example.

And the chemical ban worked because it was a total ban, no exceptions, no fine print. "If you're going to restrain a weapon, the only restraint that will work is a total ban," Price argued. Partial restraints, like "Don't bomb civilians" and "Don't torpedo commercial shipping" are doomed to fail. "In the heat of war, they often just don't hold."

The current campaign to ban land mines, Price explained, started about 1990, when mine-removal organizations in Angola, Afghanistan, and Cambodia met each other. One of the things their campaign has going for it, he said, is its insistence on a *total* ban of antipersonnel land mines.

The entire original Kuwaiti de-mining team is dead now.

Half-measures have already been tried. A 1980 treaty said that mines should be part metal, so they'd be easier to find; it said mine fields had to be fenced, posted, and mapped in detail. "Only once were those rules followed," Price reported, "by India, in a conflict with Pakistan."

Instead, soldiers now plant mines for about \$3 a piece, thousands of civilians find them by accident and die, and humanitarian organizations remove them at the rate of about three months for a field the size of the Coffman Great Hall. They too die in the process. "The entire original Kuwaiti de-mining team is dead now," said Price.

On the other hand, the thoroughness of the land-mine treaty now proposed seems to be precisely the stumbling block that keeps the U.S. from signing on. The current proposal is to ban any and all antipersonnel mines, but there is one role for antipersonnel mines that the U.S. military refuses to part with until it can develop an alternative.

An antitank mine is useless if a soldier can walk up and disarm it, Price explained, so it is protected by a surrounding of antipersonnel mines. In most cases, the

protectors and the antitank device are a single piece, so the proposed ban on antipersonnel mines does not apply. The U.S., however, prefers to protect antitank mines with separate antipersonnel mines, which the treaty won't allow.

Nonetheless, "there will be few civilians killed by U.S. land mines in the future," Price predicted. "There is essentially already a ban on dumb mines by the U.S. The U.S. uses mines that disarm with time." Dumb mines remain active indefinitely.

The U.S. relation to the land mine treaty corresponds, said Price, to its history regarding the chemical weapons treaty: It will sign on much later than most of the world, but it will abide by the treaty in the meantime—except for the antitank exception.

by Phil Norcross

* Price earned his Ph.D. from Cornell University in 1994. His dissertation, *A Genealogy of the Chemical Weapons Taboo*, has since led to an article and a book: "A genealogy of the chemical weapons taboo," *International Organization* 49.1 (1995), pages 73-103; and *The Chemical Weapons Taboo*, Cornell University Press, 1997.

Grants Management Project

{continued from page 7}

But for budgets in particular, where format and typography are not so important because review committees don't pay much attention to budgets, Haroian sees a big advantage in EGMS. For one thing, he likes being able to have several people work on a single proposal at once. For another, EGMS knows the federal accounting rules and prompts him when a particular budget item needs justification.

Finally, once a proposal is finished, it can be "cloned" for re-use. "Say you're recreating a proposal a year later. The rules may have changed; inflation may be 4 percent again. In our old system we'd have to find and change all the inflation numbers, or find the inflation parameter in a spreadsheet. Now you don't have to worry about those details," says Haroian. "The first proposal was a lot of work, but now we're so much farther ahead."

The ultimate goal is the creation, routing, and submission of grant proposals entirely over wires, with no need for paper mail. Federal research sponsors are aggressively pursuing such a system, under the name "Electronic Research Administration," or ERA. The agencies want to both receive proposals electronically and send awards back to the University that way.

by Phil Norcross

Graduate School News

Grant Opportunities Through the Office of the Vice President for Research

The Office of the Vice President for Research administers four institutional research grant programs for which faculty members on all campuses are eligible. In addition, this office coordinates procedures to nominate or select faculty members for various prizes, awards, and special grant opportunities. Each program is described briefly below. Further information, including calls for proposals, policies, and application forms is available at <http://www.research.umn.edu/research/fundsrc.html>, by e-mailing facgrant@tc.umn.edu, or by calling 612/625-2356.

Institutional Research Grant Programs Administered by the Office of the Vice President for Research

New Initiatives in Interdisciplinary Research and Postbaccalaureate Education Program

These grants support new programmatic or center activities as well as planning efforts. Proposals should be in disciplines in which the University has significant faculty strength, should focus on issues of state or national significance or on areas in which Minnesota could create a special niche, should highlight important opportunities for the education and training of graduate students, and should demonstrate that the proposed program or center has a high likelihood of drawing external funding within two or three years. Funding for planning efforts generally will not exceed \$10,000/year for a maximum of two years. Funding for the implementation of new programmatic or center activities typically will not exceed a total of \$100,000 over either a two- or three-year period. Annual deadline for July 1 funding is in January.

Grant-in-Aid of Research, Artistry, and Scholarship Program

The Grant-in-Aid program promotes excellence in the scientific, artistic, and scholarly activities of University faculty. Funds are awarded in the belief that the quality of such faculty research or artistic endeavors is a major determinant of the overall vitality of the institution. In most cases, grants are not meant to provide sole support for research activities, but instead to act as seed money for developing projects to the point of attracting more complete, external funding. Applications must fall within one of eight categories: new faculty, faculty in fields where there is little external funding available, faculty moving into significantly different areas of research or faculty working on interdisciplinary approaches, faculty who are returning from full-time administrative roles to re-establish their research, shared equipment, short research visit,

acquisition of research materials, and interim support during a temporary lapse in external funding. General areas of support include personnel, operating supplies and services, equipment, and limited travel. Deadlines are in March and October.

Undergraduate Research Opportunities Program (UROP)

This program offers financial awards to undergraduates for research, scholarly, or creative projects undertaken in partnership with a faculty member. UROP encourages students to conduct research and pursue academic interests outside of their regular courses by employing them to work on special projects. Students may receive both a stipend (up to \$1,000) and an expense allowance (up to \$300) for a single project. The maximum award is \$1,300. All faculty of the University of Minnesota may sponsor UROP students. Deadlines are in April and October.

University of Minnesota Faculty Summer Research Fellowship and McKnight Summer Fellowship Programs

The purpose of these programs is to encourage research and artistic creation by enabling faculty members to devote full time to intensive work on their projects during the summer. Eligibility is limited to regular faculty members on nine-month appointments whose proposed scholarly or creative work is in the arts, humanities, or social sciences. The McKnight Arts and Humanities Endowment, administered by the Office of the Executive Vice President and Provost, will provide a matching fellowship to awardees whose proposed scholarly or creative work is in the arts or humanities as defined by both subject matter and methodology. The summer 1998 stipend for each program is \$5,000 for a five-week summer session. McKnight awardees receive two summer sessions of support. Annual deadline is November for the following summer.

Internal Selections Coordinated by the Office of the Vice President for Research

Each year the Office of the Vice President for Research (OVPR) coordinates the internal selection of faculty preproposals for submission to a number of private foundation and federal agency competitive programs. The OVPR oversees those competitions that place a limit on the number of applications that may be submitted by an institution and when the eligible disciplines cross collegiate units within the University. For these programs, the

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OVPR informs appropriate deans, directors, and department heads/chairs of internal deadlines, which are commonly six weeks to two months earlier than the foundation or agency deadlines. For a list of previous University of Minnesota awardees of these prestigious grants, see the December 1996 issue of *Research Review*. For 1998 deadlines, see page 13 of this issue.

Burroughs Wellcome Visiting Professorships in the Basic Medical Sciences

One nomination from the University allowed per year. The professorships are offered annually to U.S. universities, medical schools, and other nonprofit scientific research institutions to enable them to bring in distinguished scientists whose interests relate to fields in the basic medical sciences. Award amount is \$5,000. Internal deadline is January for March agency deadline.

Burroughs Wellcome Visiting Professorships in the Microbiological Sciences

One nomination from the University allowed per year. The professorships are offered annually to U.S. universities, medical schools, and other nonprofit scientific research institutions to enable them to bring in distinguished scientists whose interests relate to bacteriology, biotechnology, immunology, microbiology, molecular biology, mycology, parasitology, or virology. Award amount is \$5,000. Internal deadline is March for May agency deadline.

David and Lucile Packard Fellowships for Science and Engineering

Two nominations from the University allowed per year. The goals of the fellowship program are to support outstanding junior faculty as they build productive research programs and to help attract and retain faculty of the highest quality for universities. Candidates must be in the first three years of their faculty careers (as of May 31, year of the award) and have demonstrated unusual creative ability in their research work. Award amount is \$500,000. Internal deadline is April for May agency deadline.

The Camille and Henry Dreyfus New Faculty Awards Program

One nomination from the University allowed per year. The purpose of the program is to advance the science of chemistry, chemical engineering, and related sciences as a means of improving human relations and circumstances around the world. This program was established to provide funding for new faculty members at the start of their research and teaching activities. Nominees are normally

expected to have no more than three years of postdoctoral experience and be ready to begin their first full-time tenure-track academic appointment in the year of nomination. Award amount is \$25,000. Internal deadline is April for May agency deadline.

The George A. and Eliza Gardner Howard Foundation Fellowships

Two nominations from the University allowed per year. The awards are intended to support people in the middle stages of their careers whose work to date is evidence of their promise and achievement. Support is intended to augment paid sabbatical leaves. Eligible disciplines rotate: for 1999-2000 the disciplines will be literary criticism, film criticism, and linguistics; for 2000-2001, sociology, anthropology, and philosophy. Award amount is \$20,000. Internal deadline is May for October agency deadline.

NEH Summer Stipend Program

Two nominations from the University allowed per year. The program is designed to contribute to scholarly knowledge, to the conception and substance of individual courses in the humanities, and to the general public's understanding of the humanities. Projects may address broad topics or consist of study and research in a specialized field. Award amount is \$4,000. Internal deadline is May for October agency deadline.

Searle Scholars Program

Two nominations from the University allowed per year. The program supports newly appointed faculty with research interests in medicine, chemistry, and biological science. Applicants should have their first tenure-track appointment as an assistant professor on or after July 1 of the year prior to the award. Award amount is \$180,000. Internal deadline is August for October agency deadline.

Pew Scholars Program in the Biomedical Sciences

Two nominations from the University allowed per year, one basic science and one clinical. The Pew Charitable Trusts support nonprofit organizations that seek to improve the quality of life for people and communities and that encourage personal growth and self-sufficiency. This program is intended to support junior investigators of outstanding promise in basic and clinical sciences relevant to the advancement of human health. On July 1 of the year of award, candidates must not have been members of the full-time faculty of that or any other institution for more than three years, whether or not such appointments were on a tenure track. Award amount is \$200,000. Internal deadline is August for November agency deadline.

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Burroughs Wellcome Career Awards in the Biomedical Sciences (including Awards in Reproductive Science)

Six nominations from the University allowed per year. These awards are intended to enhance the scientific development and productivity of outstanding junior investigators at the postdoctoral level in the biomedical sciences and to assist individuals in making the critical transition to becoming independent investigators. Candidates must have completed from 12 to 48 months of postdoctoral research training by the nomination deadline. Recipients must complete at least one year of postdoctoral training as part of the award. All awardees receive three years of support during the faculty appointment. Award amount is \$412,500 to \$532,400. Internal deadline is August for October agency deadline.

NSF Computer and Information Science and Engineering (CISE) Research Infrastructure Program

One proposal from the University allowed per year. A primary objective of the program is to stimulate experimental work in CISE research, as measured by increased scientific activity and increased participation in research of both faculty and graduate students. It also provides assistance to activities for integration of research and education. Support is provided for equipment, software, maintenance, and appropriate technical support staff. To qualify, the proposing research group should have an existing core of active researchers and research projects in CISE research. The institution should be prepared to provide substantial cost-sharing for the proposed project equal to at least one third of the budget requested of NSF. Award amount is \$800,000 to \$2,000,000. Internal deadline is August for October agency deadline.

The Camille and Henry Dreyfus Teacher-Scholar Awards Programs

One nomination from the University allowed per year (either one Camille or one Henry). These programs were established to strengthen the teaching and research careers of talented junior faculty in the chemical sciences. The Camille award focuses primarily on individual research attainment and promise; the Henry award stresses teaching, mentorship, and the nominee's accomplishments in research and teaching with undergraduates. Nominees must hold a full-time tenure-track academic appointment and normally are expected to be within the first five years of their academic careers. Award amount is \$60,000. Internal deadline is September for November agency deadline.

Burroughs Wellcome New Investigator Awards in the Pharmacological and Toxicological Sciences

Two nominations from the University allowed per year, one in the pharmacological and one in the toxicological sciences. The program is designed to identify and encourage the development of talented scientists early in their careers who will bring new ways of thinking and new experimental approaches to pharmacological and toxicological sciences. The awards are intended to give recipients the freedom and flexibility to engage in high-risk research that holds potential for moving their respective fields in promising new directions. At the time of nomination, candidates must be within the first three years of a tenure-track position as an assistant professor or its equivalent. Award amount is \$195,000. Internal deadline is September for November agency deadline.

Brookdale National Fellowship Program

Unlimited nominations from the University allowed per year, but must be peer reviewed by the University. The program is designed to foster the development of a new generation of leaders in geriatrics and gerontology by supporting investigators in the developmental stages of their careers as well as established researchers who are shifting the focus of their work to the field of aging. Candidates are generally between the fourth and seventh years of their postdoctoral work. A mentor is required. Award amount is \$110,000 to \$127,500. Internal deadline is October for December agency deadline.

Burroughs Wellcome Scholar Award in Molecular Parasitology

One nomination from the University allowed per year. The program's goal is to foster the development and productivity of scientists who will bring new ways of thinking and new experimental approaches to the study of parasitic diseases, which have been relatively neglected as targets for basic research. The awards are intended to give recipients the freedom and flexibility to pursue new avenues of inquiry and higher-risk research projects that hold potential for advancing significantly the biochemical, pharmacological, immunological, and molecular biological knowledge of major pathogens and arthropod vectors that spread parasitic diseases. Candidates must be established independent investigators at the associate professor level or its equivalent. Consideration will also be given to senior investigators who are significantly re-orienting their research from another field to molecular parasitology. Award amount is \$400,000. Internal deadline is November for January agency deadline.

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Burroughs Wellcome New Investigator Award in Molecular Parasitology

One nomination from the University allowed per year. Description same as Scholar Award above, except candidates must be established independent investigators at the *assistant* professor level or its equivalent. Award amount is \$195,000. Internal deadline is November for January agency deadline.

Burroughs Wellcome New Initiatives in Malaria Research Awards

Two nominations from the University allowed per year. The program's goal is to increase the fundamental understanding of the biology and pathogenesis of malaria. The awards are intended to attract more investigators to malaria research, to encourage them to bring novel approaches to studying the pathogens and arthropod vectors responsible for causing the disease, and to enhance scientific collaborations between investigators at the same or different institutions. Award amount is \$100,000 for feasibility studies and \$400,000 for longer-term studies. Internal deadline is November for January agency deadline.

Candidates may be nominated for only one of the three Burroughs Wellcome awards in parasitology: scholar award, new investigator award, or malaria research initiative.

Burroughs Wellcome Scholar Award in Molecular Pathogenic Mycology

One nomination from the University allowed per year. The program's goal is to foster the development and productivity of scientists who will bring new ways of thinking and new experimental approaches to the study of pathogenic fungi. The awards are intended to give recipients the freedom and flexibility to pursue new avenues of inquiry and higher-risk research projects that hold potential for advancing significantly the field of medical mycology. Candidates must be established independent investigators at the late assistant professor to associate professor level or its equivalent. Consideration will also be given to more senior investigators who are significantly reorienting their research from another field to medical mycology. Award amount is \$400,000. Internal deadline is November for January agency deadline.

Burroughs Wellcome New Investigator Award in Molecular Pathogenic Mycology

One nomination from the University allowed per year. Description same as Scholar Award above, except candidates must be established independent investigators at the

assistant professor level or its equivalent. Award amount is \$195,000. Internal deadline is November for January agency deadline.

Burroughs Wellcome Interfaces Between the Physical/Chemical/Computational Sciences and the Biological Sciences

One nomination from the University allowed per year. The purpose of the program is to encourage interdisciplinary training of promising graduate and postdoctoral students in the physical and computational sciences so they can better apply their unique knowledge and talents to biomedical problems. Award amount is \$1,750,000 to \$2,500,000. Internal deadline is November for February agency deadline, but there is not an annual call.

John Merck Scholars Program in the Biology of Developmental Disabilities in Children

Two nominations from the University allowed per year, one in the neurobiological and one in the cognitive sciences. By supporting the best basic research into the processes that are impaired in the developmentally disabled, the program aims to foster a better scientific understanding of the origin of these disabilities and thereby provide the foundation for new approaches to their prevention and treatment. Intended for investigators at the assistant professor level who are pursuing careers in fields relating to the mentally handicapped and emotionally disturbed child. Award amount is \$240,000. Internal deadline is November or December for January agency deadline.

NSF Major Research Instrumentation Program

Two proposals from each campus of the University allowed per year (three if one is for instrument development). Minneapolis and St. Paul are considered separate campuses for this program. The MRI program assists in the acquisition or development of major research instrumentation by U.S. institutions that is, in general, too costly for support through other NSF programs. It seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments. Cost sharing at a level of 30 percent of total eligible project costs is required. Award amount is \$100,000 to \$2,000,000. Internal deadline is December for February agency deadline.

1998 Internal Deadlines for Programs Administered or Coordinated by the Office of the Vice President for Research

January 12	Burroughs Wellcome Visiting Professorships in the Basic Medical Sciences
January 26	New Initiatives in Interdisciplinary Research and Postbaccalaureate Education
March 2	Grant-In-Aid of Research, Artistry, and Scholarship
March 9	Burroughs Wellcome Visiting Professorships in the Microbiological Sciences
April 6	Undergraduate Research Opportunities Program
April 13	David and Lucile Packard Fellowships for Science and Engineering
April 13	Camille and Henry Dreyfus New Faculty Awards Program
May 11	George A. and Eliza Gardner Howard Foundation Fellowships
May 11	NEH Summer Stipend Program
August 10	Searle Scholars Program
August 10	Pew Scholars Program in the Biomedical Sciences
August 10	Burroughs Wellcome Career Awards in the Biomedical Sciences
August 10	NSF CISE Research Infrastructure Program
September 28	Camille and Henry Dreyfus Teacher-Scholar Awards Program
September 28	Burroughs Wellcome New Investigator Awards in the Pharmacological and Toxicological Sciences
October 5	Grant-In-Aid of Research, Scholarship, and Artistry
October 19	Brookdale National Fellowship Program
October 26	Undergraduate Research Opportunities Program
November 9	U of M Faculty Summer Research Fellowship and McKnight Summer Fellowship Program
November 16	Burroughs Wellcome Scholar/New Investigator Award in Molecular Parasitology
November 16	Burroughs Wellcome Scholar/New Investigator Award in Molecular Pathogenic Mycology
November 16	Burroughs Wellcome New Initiatives in Malaria Research Awards
November 23	John Merck Scholars Program in the Biology of Developmental Disabilities in Children
December 14	NSF Major Research Instrumentation Program

All internal deadlines should be verified with the Office of the Vice President for Research by calling 612/625-2356 or e-mailing facgrant@tc.umn.edu or checking <http://www.research.umn.edu/research/fundsrc.html>.

Criteria by which *Research Review* Selects Awards and Citations for its Monthly Lists

In a typical month, University of Minnesota faculty, staff, and students receive 300 to 400 new funding awards and publish 400 to 500 new scholarly books and articles. Each month *Research Review* has room to list, at the very most, about 150 awards and citations.

Inclusion or exclusion of a given award or citation in *Research Review's* monthly lists is not the result of formal competition. Such a competition would probably take more than a month and not result in a significant improvement over the current process.

After accommodating specific requests from the University community, the editor selects additional items by a quick, informal process. The criteria that guide that process are described below. If you can suggest an improvement by which this process will better serve the University, please call Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Thank you for helping us to publicize your work.

Criteria for Selection of "Research, Training, and Service Awards"

1. *Research Review* lists any recent award that a member of the University specifically asks it to.
2. *Research Review* selects additional awards from among those received at ORTTA during the month before a given issue is created; e.g., the August issue, assembled in July, lists awards received at ORTTA in June.
3. *Research Review* favors a selection of awards that represents the range of disciplines present in the University.
4. *Research Review* favors awards for work by investigators or in disciplines that typically receive few awards and that it has not included lately or often.
5. *Research Review* favors awards whose titles suggest work of interest to a wide range of its readers.
6. *Research Review* lists new awards, and renewing awards that had to compete for renewal. It does not usually include awards that are continuations or supplements of existing awards.
7. *Research Review* lists most competing awards for amounts of \$100,000 or more.

Criteria for Selection of "Recent Publications by University Authors"

1. *Research Review* lists any recent citation that a member of the University specifically asks it to.
2. Additional citations are selected from recent additions to the index *Current Contents*.
3. *Research Review* favors "new" citations, which means work published in the last three months or so, though "new" depends on the frequency of the source publication. An item published in a quarterly three months ago is newer than an item published in a weekly three months ago.
4. *Research Review* favors a selection of citations that represents the range of disciplines present in the University.
5. *Research Review* favors citations from authors and disciplines it has not included lately or often.
6. *Research Review* favors citations whose titles suggest work of interest to a wide range of its readers.

Michael D. Resnick Receives Award

Michael D. Resnick received the 1997 Betty Hubbard Maternal and Child Health Leadership Award on November 7, 1997. It was presented to him by the Minnesota Health Commissioner, Anne Barry. The award recognizes outstanding leadership and achievements in advancing the health of mothers and children and is presented in two categories: one that recognizes achievements at the community level and one that recognizes accomplishments of statewide significance. Resnick, a professor of public health and pediatrics at the University of Minnesota, received the statewide award.

Publications by University Authors

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Capitol Publications

Free Online Resource

Capitol Publications' new website has a number of features to help prospective applicants find more funding opportunities. *Funder of the Day* posts a new federal, private, or corporate funding opportunity daily. *Catalog* is the gateway to a library of grantseeking newsletters, books, databases, and software products. *Other Sites & Services* links to other helpful web sites on the Internet. And the searchable archive links to the contents of all Capitol Publications grants newsletters published in the past four years.

Visit <http://grantscape.com>—it's free!

National Institutes of Health

National Eye Institute

The National Eye Institute (NEI) has released revised guidelines for the submission of competing and noncompeting core grant applications. The primary objective of core grants for vision research is to provide groups of investigators who have already achieved funding from NEI with additional, shared support to enhance their own and their institution's capability for conducting vision research. Secondary objectives include the facilitation of collaborative studies and the attraction of other scientists to research on the visual system.

A copy of the revised guidelines are available from ORTTA and may be requested by calling Therese Graner at 612/624-7021 or by sending a note to gopher@ortta.umn.edu. For further information contact Carolyn E. Grimes, 301/496-5884, fax 301/496-9997, cegrimes@nei.nih.gov or Ralph J. Helmsen, 301/496-5301, fax 301/402-0528, ralph.helmsen@nei.nih.gov.

National Institutes of Health

For Questions about NIH, Call ASKNIH

The ASKNIH office at the National Institutes of Health provides general information about extramural research, research training, and application and review procedures. Questions it can't answer, it will refer to the proper source.

ASKNIH also runs an exhibit program that brings NIH staff to medical research meetings.

Contact ASKNIH by phoning 301/435-0714 or writing to asknih@od.nih.gov (note: this is a change of e-mail address). For information about the exhibit program, call Judith Grover, 301/435-2801, judith_grover@nih.gov.

Call for Papers:

Joint Conference on Campus Safety and Hazardous Waste

The College and University Hazardous Waste Conference and the International Conference on Campus Safety will take place next July 19 through 24 at Tulane University, New Orleans.

One-page abstracts for papers and posters to be presented at the conference must be received by January 30. All hazardous waste topics will be considered, but special emphasis will be given to the problems of small waste programs.

Abstracts on hazardous waste topics should go to Fay Thompson, director of UM's Department of Environmental Health and Safety, W136 Boynton, thomp006@tc.umn.edu. Abstracts on other topics should go to Donald Clark, Safety and Health Office, Texas A&M, cshemapapers@tamu.edu.

For more information, contact Thompson, or see www.tmc.tulane.edu/oehs/cshema98.htm.

Happy Holidays

to all

from

the staff at

ORTTA



Competition Seeks to Award Cash and Recognition to Entrepreneurs' Business Plans

A collaboration of the University and Twin Cities businesses invites entries in a competition that will award \$25,000 and \$10,000 in cash and services, as well as valuable recognition, to two promising business plans.

To encourage high-quality entries, the sponsors will provide workshops in Duluth, Rochester, and the Twin Cities on how to create business plans. The final awards will be made at a public event in May, where Walter Mondale will be keynote speaker.

The competition is sponsored by the University, St. Paul Venture Capital, business consultants KPMG Peat Marwick, the law firm of Dorsey & Whitney, and the Riverside Bank.

The purpose of the competition, according to Michael Gorman, a partner in St. Paul Venture Capital, is to help businesses in their early stages and to strengthen the University's role as a gathering place for new technologies, entrepreneurs, business education, and the business community.

"Over the long-term," Gorman said in an interview, "we hope this competition becomes known as *the* place where great ideas get their first exposure."

Entries will be judged by Win Wallin, former chair of Medtronic; David Kidwell, dean of the Carlson School; John Rollwagen, former CEO of Cray Research; Dave Cleveland, CEO and president of Riverside Bank; Jay Novak, commissioner of the Minnesota Department of Trade and Economic Development; Ken Wessels, a partner at the investment bank Wessels, Arnold, and Henderson; Barbara King, president of Landscape Structures, Delano; and Pat Hopf, managing general partner of St. Paul Venture Capital.

The competition is open to Minnesota-based for-profit companies with less than \$2 million in sales and \$1 million in capital. The business plan workshops will take place in late January and early February, dates to be announced.

Preliminary, one-page, entries are due Jan. 15, 1998, and final business plans are due March 15.

For information, call the Carlson Center for Entrepreneurial Studies at the Carlson School of Management, Richard Cardozo, director, 612/624-5524.

National Institutes of Health

National Institute of Mental Health

The National Institute of Mental Health (NIMH) is moving ahead with plans for millions of dollars in new mental health treatment initiatives. The emphasis is on developing new interventions that are effective in the community in a variety of settings. NIMH will re-examine the issue of effectiveness, moving beyond a narrow view of clinical efficacy to a broader notion of influencing functional ability; and it will look at select populations, including, for example, pharmacological treatments for children.

NIMH also plans to pursue research partnerships with managed care organizations and industry to facilitate studying real-world interventions.

Program announcements will be upcoming. However, there is no reason for researchers to wait until announcements appear. Proposals may be submitted on the following topics right now through the regular investigator-initiated grants application process.

- Rehabilitation in mental health; projects that address the meaning of mental health interventions for chronic conditions.
- Psychotherapeutic and psychopharmacologic interventions for children, including a large multisite trial to test treatments for mood disorder, anxiety, and schizophrenia.
- Suicide among the elderly, particularly white elderly men.
- Dissemination of treatment information projects, focusing on "how do we change provider behavior as part of treatment."
- Bipolar disorder.
- Continued research on mental health systems and cost and financing of mental health services.

For personnel listings and information on NIMH programs, go to <http://www.nimh.nih.gov/>.

From Federal Grants & Contracts Weekly, Vol 21, No. 42, Oct. 20, 1997

More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ Environmental Protection Agency Drinking Water

The Environmental Protection Agency (EPA) is inviting applications for a program to improve the quality of drinking water by appropriately balancing health risks caused by exposure to microbial pathogens with risks from disinfection byproducts. Funding areas include microbial pathogens in the source waters of the United States, disinfection byproducts, and emerging contaminants from the contaminant candidate list.

Pathogens research should focus on developing and improving analytical methods to quantify the occurrence of various organisms. Research is also needed to establish approaches for determining the general impact of susceptibility factors, such as age and nutrition, and the role of biofilms in protecting pathogens from disinfectant residuals.

Research in disinfection byproducts should improve methods for estimating human exposures to the byproducts of different treatments in areas including ozonation byproducts, chloramination byproducts, byproducts formation and stability, treatment techniques for removing precursors of disinfection byproducts, disinfection byproduct modeling, and human exposure.

\$4 million is available for awards ranging from \$250,000 to \$500,000 for two or three years. U.S. academic and nonprofit institutions and state and local governments are eligible to apply.

The application deadline is **February 26, 1998**. For further information contact William Stelz, U.S. Environmental Protection Agency, National Center for Environmental Research and Quality Assurance (8703R), 401 M Street SW, Washington, DC 20460; 202/564-6834, stelz.william@epamail.epa.gov. Information is available online at <http://www.epa.gov/ncerqa>.

■ Environmental Protection Agency Urban Air Toxics

The Environmental Protection Agency (EPA) is seeking applications for research to pin down potential health effects, both cancer and noncancer related, associated with air toxics emissions from stationary and mobile sources.

Research issues include observational evidence—for example epidemiological data—linking health effects with ambient levels of exposure to hazardous air pollutants (HAPs); approaches needed to identify the most toxic HAPs and HAP mixtures in urban air; identification of subpopulations at increased risk from HAPs; the most significant sources of toxic pollutants of concern in urban areas; ways that monitoring and modeling, including emissions modeling and dispersion modeling, can be linked to estimate exposure and risk; and improving current dose-response assessment methods.

\$2 million is available for awards ranging from \$50,000 to \$200,000 for up to three years. U.S. academic and nonprofit institutions and state and local governments are eligible to apply.

The application deadline is **February 12, 1998**. For applications contact the Environmental Protection Agency, National Center for Environmental Research and Quality Assurance (8703R), 401 M Street SW, Washington, DC 20460; 800/490-9194. For program information contact Deran Pashayan at 202/564-6913, pashayan.deran@epamail.epa.gov. The solicitation is available online at <http://es.inel.gov/ncerqa/rfa/982brfa.html>.

■ U.S. Department of Education Graduate Assistance in Areas of National Need

The U.S. Department of Education is inviting applications for the Graduate Assistance in Areas of National Need Program. This program provides fellowships through academic departments and programs of institutions of higher education 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.

Applications are requested in these areas of national need: biology, chemistry, computer and information sciences, engineering, geoscience, mathematics, and physics. The first invitational priority is for mathematics

{next page}

programs that train Ph.D.s in mathematics who will specialize in teaching students at the K-12 level. The second invitation priority is for biology, chemistry, and physics programs that train Ph.D.s who will specialize in teaching biology, chemistry, or physics to students at the K-12 level. The third invitation priority is for engineering programs that train Ph.D.s for careers in the fields of environmental health and robotic technology.

The maximum fellowship stipend for academic year 1998-1999 is \$15,000. Up to 60 awards will be made for up to 36 months each.

The application deadline is **January 5, 1998**. For information and applications contact Cosette H. Ryan, U.S. Department of Education, International Education and Graduate Program Service, 600 Independence Avenue SW, Suite 600-B, Portals Building, Washington, DC 20202-5247.

The announcement may be accessed electronically in text or portable document format (pdf) at either of two web sites: <http://ocfo.ed.gov/fedreg.htm> or <http://www.ed.gov/news.html>. To use the pdf you must have the Adobe Acrobat Reader Program with Search, which is available free at either of the sites. If you have questions about using the pdf, call the U.S. Government Printing Office, toll free, at 888/293-6498.

■ Department of Energy Automotive Research for Advanced Technologies

The Department of Energy (DOE) invites applications for research on the Cooperative Automotive Research for Advanced Technologies (CARAT) Program. The program is a set-aside for small businesses and higher education institutions. It is for research in the areas of vehicle systems, advanced gas turbines, fuel cells, batteries, flywheel energy storage, compression ignition direct injection (CIDI), and alternative fuels.

The application deadline is **February 24, 1998**. The solicitation will be available at <http://www.ch.doe.gov/business/ACQ.htm>. Printed copies will not be available. For other information contact Ms. Tanga Baylor, Acquisition and Assistance Group, Chicago Operations Office, 9800 South Cass Avenue, Argonne, IL 60439; 630/252-2214, fax 630/252-5045, Tanga.Baylor@CH.DOE.Gov. The Solicitation number is DE-PS02-98EE50493.

■ National Science Foundation Postdoctoral Fellowships

The National Science Foundation (NSF) announces the continuation of the Postdoctoral Fellowships in Science, Mathematics, Engineering and Technology Education program. The primary objectives of the program are 1) to prepare Ph.D.s in science, mathematics, engineering, and technology (SMET) with the necessary skills to assume leadership roles in SMET education in diverse educational institutions, and 2) to provide opportunities for outstanding Ph.D. graduates to develop expertise in a facet of science education research that would qualify them for the new range of educational positions that will come with the 21st century.

To be eligible, individuals must 1) be citizens, nationals, or permanent residents of the U.S. at the time of application, and 2) have received a doctoral degree (Ph.D. or equivalent) in one of the SMET fields supported by NSF on or after January 1, 1995, but no later than October 1, 1998.

The stipend for fellows will be \$3,000 per month. In addition, a research allowance of \$500 per month is provided to be used at the discretion of the fellow for scientific educational supplies, special travel, publication costs, and other research-related expenses. NSF will also provide an institutional allowance of \$750 per month to aid in defraying the costs of hosting the fellow. Fellowships are for two years; however NSF will consider an extension of support for another 12 months. NSF hopes to support approximately 20 fellowships in FY 1998.

The program highly encourages applicants to move to another institution for their postdoctoral work. They may apply to remain at the same institution where they conducted their Ph.D. study, but they must clearly justify their reasons for not going elsewhere.

The application deadline is **January 15, 1998**. A copy of the announcement is available from ORTTA and may be obtained by calling Therese Graner at 624-7021 or by sending a message to gopher@ortta.umn.edu. The announcement may also be downloaded from <http://www.nsf.gov/pubsys/index.htm>. For further information contact the Postdoctoral Fellowships in Science Education, National Science Foundation, Suite 907N, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1697, PFSMETE@nsf.gov. The PFSMETE home page is <http://www.ehr.nsf.gov/EHR/DGE/pfs1.htm>.

■ Department of Energy Energy Sciences Research

The U.S. Department of Energy, Office of Energy Research, is inviting grant and cooperative agreement applications for energy sciences. Research areas include basic energy sciences, high-energy physics, nuclear physics, computational and technology research, fusion energy sciences, biological and environmental research, and energy research analyses.

About \$400 million is available for multiple awards. Colleges and universities, nonprofit and for-profit organizations, state and local governments, and individuals are eligible to apply.

There is **no application deadline**—proposals may be submitted at any time. For further information contact John Alleva, Grants and Contracts Division, Office of Energy Research, ER-64, Energy Department, 19901 Germantown Road, Germantown, MD 20874-1290; 301/903-5544. Information is available online at <http://www.er.doe.gov/production/grants/grants.html>. Refer to program notice 98-01.

■ BFGoodrich Collegiate Inventors Program

The BFGoodrich Collegiate Inventors Program is open to any student enrolled full time in a college or university in the United States. The invention, idea, or process submitted must be original, and the result of work completed by a student (or team) with his or her faculty advisor.

Participation in the All-Collegiate Category is open to graduate, postgraduate, and undergraduate students. Up to three winners are recognized, each receiving a \$7,500 cash prize. Advisors each receive a \$2,500 cash prize.

Up to three winners are honored in the Undergraduate Category. Each is awarded a \$3,000 cash prize. Advisors each receive a \$1,000 cash prize.

Awards will be presented to winners during National Inventors Hall of Fame Weekend, September 18-20, 1998, in Akron, Ohio.

Entries must be received by **June 2, 1998**. For application kits call Paul Kunce, program coordinator, 800/968-IDEA, fax 330/762-6313, pkunce@invent.org. To download application forms from the Internet, access <http://www.invent.org>.

■ Health Resources and Services Administration Sudden Infant Death Syndrome

The Health Resources and Services Administration (HRSA) is inviting applications to increase the capacity of Title V Social Security programs to design, implement, and evaluate culturally competent service delivery systems for those at risk or affected by sudden infant death syndrome and other causes of infant death. One award for \$125,000 will be made.

The application deadline is **February 27, 1998**. For information call Paul Rusinko, 301/443-2115, or 888/333-hrsa; prusinko@hrsa.dhhs.gov; <http://www.hrsa.dhhs.gov>. The CFDA number is 93.1100.

■ Minnesota Technology, Inc. Technology Partnership Fund

The Technology Partnership Fund was established by Minnesota Technology, Inc., to strengthen and stimulate relationships between small- to medium-sized technology companies and post-secondary institutions within the state. Up to \$100,000 in matching funds are available to Minnesota companies that will work with an academic partner on applied research that will lead to the development of a new or improved product.

\$750,000 is available to fund proposals. Matching funds are required at a one-to-one match.

The deadline for preliminary proposals is **January 30, 1998**. Final proposals must be submitted jointly by the company and academic partner, and will be due **February 27, 1998**. For additional information, assistance in finding partnerships, or for a copy of the application guidelines, please call Michelle Schaben at 612/672-3486, fax 612/339-5214. Minnesota Technology is located at 111 Third Avenue South, Minneapolis, MN 55401.

■ McKnight Foundation Mississippi River Program

The McKnight Foundation intends to expand its program of environmental grantmaking to protect the Mississippi River. Since 1992 the foundation has given more than \$12.5 million to the environment; during the next five years, an additional \$27.75 million will be awarded. The program will focus on four types of projects:

1. *Creating Mississippi River greenways in Minneapolis-St. Paul, the Quad Cities of Iowa and Illinois, and St. Louis, Missouri.* To support riverfront parks, trails, and open areas that encourage recreation, protect riverside lands, help rehabilitate inner-city neighborhoods, buffer drinking water from pollution, and increase appreciation of the river as a community asset.
2. *Protecting rural watersheds and river corridors.* Most grants will go to organizations working in the Minnesota River Valley and the bluffslands from southeastern Minnesota through Iowa and Illinois. Activities may include restoring wetlands, educating the public about clean water issues, and reducing farm runoff that pollutes the Mississippi downstream.
3. *Ensuring that environmental protection receives equal consideration with economic development in federal navigation and flood control projects.* To provide funds that promote environmentally beneficial river projects and expose wasteful or damaging programs.
4. *Building a potent constituency for river protection.* The foundation will make grants to strengthen the capacity of groups protecting the Mississippi's environment and to support other conservation efforts all along the river.

Eligible applicants are groups classed by the IRS as tax-exempt, nonprofits that are not private foundations.

Potential applicants are encouraged to discuss the project with the foundation before writing two- to four-page letters of inquiry. Letters are accepted at any time, but to be considered at a specific board meeting, must be received three and a half months before that meeting, or by **February 15, May 15, August 15, and November 15.** Full proposals will be invited.

For a copy of the booklet *Mississippi River Program: Guidelines for Grant Applicants*, call 612/333-4220. For other information call Dan Ray, Program Officer, 612/333-4220 or dray@mckfdn.org.

■ The Leukemia Research Foundation

The Leukemia Research Foundation has released the announcement for its 1998 grants program. The foundation supports two types of funding:

Research Grants: The foundation will support new, unfunded projects in leukemia research but not continuing projects. Preference will be given to investigators who have not had previous support from the foundation. Eligibility will be restricted to investigators who are within five years of the end of their training or their first faculty appointment at the time the grant starts. Questions regarding eligibility should be made in advance to the contact person listed below. Grants are for one year with the option of one additional competing renewal. The maximum grant award for one year is \$35,000.

Postdoctoral Fellowships: Persons with M.D. or Ph.D. degrees or equivalent will be considered for one year of nonrenewable salary support during their first to fourth years of postdoctoral training, provided that more than 90 percent of their effort will be devoted to research with a sponsor who has a research program related to leukemia. Clinical residents are not eligible. Support will not exceed \$23,000.

The application deadline is **February 15, 1998.** A copy of the announcement, including 1998 application forms, is available from ORTTA and may be requested by calling Therese Graner at 624-7021 or by sending a note to gopher@ortta.umn.edu. Further information may be obtained from Ms. Hollis R. Brownstein, Chairman, Medical Advisory Committee, 5900 Warren Court, Morton Grove, IL 60053; 847/965-0017, fax 847/581-0779, Hollis-LRF@worldnet.att.net.

■ American Digestive Health Foundation

\$3.2 million of research awards in 17 different categories are distributed each year by the American Digestive Health Foundation (ADHF). Awards are available for all stages of career development, from the high school student to the senior investigator. Application deadlines occur throughout the year.

The next deadline is **January 10, 1998**, in the categories of career development in endoscopic and clinical research, basic science, and international and student meeting travel.

For more information about the ADHF or for a copy of the *ADHF Research Awards Book*, contact the national office at 301/654-2635 or visit at <http://www.gastro.org> or <http://www.asge.org>.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	346	\$ 87,064,915
Awards Processed		
October 1997	309	29,776,298
Proposals Submitted		
July 1997 - October 1997	1,247	260,535,266
Awards Processed		
July 1997 - October 1997	1,170	133,500,092
Proposals Submitted		
July 1996 - October 1996	1,244	194,120,725
Awards Processed		
July 1996 - October 1996	1,139	115,268,879

Fiscal Year 1998 Community Service Grant

Andrew J. Marlow, University College

Corporation for Public Broadcasting
\$67,386 - 10/1/97-9/30/99

Fiscal Year 1998 Community Service Grant

Paul Schmitz, Media Resources

Corporation for Public Broadcasting
\$55,682 - 10/1/97-9/30/99

National Program Production and Acquisition Grant

Paul Schmitz, Media Resources

Corporation for Public Broadcasting
\$22,538 - 10/1/97-9/30/99

Master Clinical Trials Agreement

Leo T. Furcht, Laboratory Medicine and Pathology

Searle
\$160,000 - 1/16/97-12/18/01

Molecular Basis of Action of the Putative Oncogene BCL6

Vivian J. Bardwell, Cancer Center

NIH, NCI
\$96,242 - 9/30/97-9/29/98

Neuroscience Training in Drug Abuse Research

Virginia S. Seybold, Cell Biology and Neuroanatomy

NIH, NIDA
\$288,028 - 9/1/97-6/30/98

Role of RNA Structure During Trypanosomatid Editing

Greg Connell, Pharmacology

NIH, NIAID
\$95,412 - 9/30/97-8/31/98

Grants for the Establishment of Departments of Family Medicine

William E. Jacott, Family Practice and Community Health

HRSA
\$194,400 - 9/1/97-8/31/98

Megacaryocyte Growth and Development Factor (MGDF) Safety and Efficacy Clinical Study

J. Jeffrey McCullough, Laboratory Medicine and Pathology

Randy Peterson, Laboratory Medicine and Pathology

Amgen
\$252,759 - 3/13/97-10/31/97

Double-Blind Placebo-Controlled, Dose Phase II Study of FIBLAST® Trafermin in the Treatment of Arterial Disease

Alan Hirsch, Medicine

Scios, Inc.
\$218,031 - 3/1/97-2/28/98

Antisense Drug Resistant Gene Therapy for Chronic Myelogenous Leukemia

Catherine M. Verfaillie, Medicine

NIH, NCI
\$184,705 - 9/24/97-6/30/98

Osteoclast Formation and Tumor Osteolysis

Denis Clohisy, Orthopaedic Surgery

NIH, NIAMS
\$43,522 - 8/27/97-7/30/98

The Streptococcal Initiative

Patricia Ferrieri, Pediatrics

Brigham and Women's Hospital
\$134,482 - 9/30/97-9/29/98

Renal Failure in Hereditary Nephritis: Genesis and Therapy

Clifford Kashtan, Pediatrics

NIH, NIDDK
\$72,759 - 9/30/97-8/31/98

Quantitative Magnetic Resonance Assessment of Microvascular Dysfunction

Norbert Wilke, Radiology

NIH, NHLBI
\$285,849 - 9/30/97-8/31/98

Proton Metabolite Mapping in Extra Temporal Epilepsy

Xiaoping Hu, Radiology

NIH, NINDS
\$199,841 - 9/30/97-8/31/98

Double-Blind, Randomized, Multicenter Clinical Trials to Evaluate the Efficacy of Steroid Sparing in Renal Allograft Recipients

Arthur Matas, Surgery

Hoffmann-La Roche Pharmaceuticals
\$274,747 - 6/10/97-9/30/02

Polyurethane Calcification, Mechanism and Inhibition

Richard W. Bianco, Surgery

Children's Hospital Philadelphia
\$85,720 - 8/1/97-7/31/98

Immunotoxins in Human Bone Marrow Transplantation

Daniel A. Vallera, Therapeutic Radiology

NIH, NCI
\$209,474 - 9/15/97-7/31/98

Measurement and Source Apportionment of Human Exposures to Hazardous Air Pollution

Ken Sexton, Public Health

St. of Minn., Pollution Control Agency
\$13,633 - 7/1/97-6/30/98

Occupational Safety and Health Educational Resource Center

Ian A. Greaves, Environmental and Occupational Health

CDC
\$747,888 - 7/1/97-6/30/98

Reducing Cancer-Related Dietary Risk Behaviors in Adolescents

Leslie Lytle, Epidemiology

NIH, NCI
\$518,385 - 8/1/97-5/31/98

Reducing the Social Availability of Tobacco to Youth
Jean L. Forster, Epidemiology
NIH, NCI
\$455,290 - 9/30/97-8/1/98

Prospective Investigation of Twin Gestation
Judith E. Brown, Epidemiology
HRSA, Maternal and Child Health
\$264,779 - 10/1/97-9/30/98

National Long-Term Care Mentoring Program
Robert L. Kane, Health Services Research
Robert Wood Johnson Foundation
\$348,020 - 10/1/97-9/30/99

Nurse-Midwife and Nurse Practitioner Program
Melissa D. Avery, Nursing
HRSA, Bureau of Health Professions
\$263,463 - 7/1/97-6/30/98

Professional Nurse Traineeship Program
Sandra R. Edwardson, Nursing
HRSA, Bureau of Health Professions
\$115,763 - 7/1/97-6/30/98

Intervention to Prevent Construction Worker Hearing Loss
Madeleine J. Kerr, Nursing
CDC, NIOSH
\$195,806 - 9/30/97-9/29/98

Opiate Modulation of Pulmonary Infection
Thomas W. Molitor, Clinical and Population Sciences
NIH, NIDA
\$301,761 - 8/1/97-7/31/98

Measurement of Protective Immunity for Porcine Reproductive and Respiratory Syndrome Virus
Han S. Joo, Clinical and Population Sciences
Robert Morrison, Clinical and Population Sciences
National Pork Producers Council
\$23,900 - 9/1/97-9/1/98

Novel High-Performance Magnetoferroelastic Actuators
Richard D. James, Aerospace Engineering and Mechanics
Boeing Commercial Airplane Group
\$158,940 - 9/22/97-9/21/99

Simulation and Modeling of Fluid Turbulence
Paul R. Woodward, Astronomy
Lawrence Livermore National Laboratory
\$99,999 - 8/1/97-9/30/98

Connecting Laboratory and Conceptual/Theoretical Components of Undergraduate Core Engineering Courses
D. Fennell Evans, Chemical Engineering and Materials Science
Karl A. Smith, Civil Engineering
V. R. Voller, Civil Engineering
National Science Foundation
\$400,000 - 9/15/97-8/31/00

Theoretical Analysis of the Sintering of Amorphous Particles
Jeffrey J. Derby, Chemical Engineering and Materials Science
American Chemical Society, Petroleum Research Fund
\$50,000 - 9/1/97-8/31/99

Dioxygen Activation by Hindered Copper Complexes
Patrick L. Holland, Chemistry
William B. Tolman, Chemistry
NIH, NIGMS
\$24,292 - 9/29/97-9/28/98

Effect of Welded Stiffeners on Crack Growth Rate
Robert Dexter, Civil Engineering
McMullen Associates, Inc.
\$75,000 - 9/5/97-12/29/98

Rapid Thermal Annealing of Magnetic Materials
Stephen A. Campbell, Electrical Engineering
Seagate Technology Corp.
\$50,000 - 7/1/97-6/30/98

Biodiesel Pickup Demonstration
David B. Kittelson, Mechanical Engineering
Robert W. Waytulonis, Mechanical Engineering
Minnesota Soybean Research and Promotion Council
\$5,500 - 10/1/97-8/31/98

Improved Dissolved Gas Modeling for the Snake and Columbia Rivers
John S. Gulliver, St. Anthony Falls Laboratory
USDoD, Army
\$68,949 - 7/28/98-8/31/98

Controls of Ecosystem Invasibility and Assembly
G. David Tilman, Ecology, Evolution, and Behavior
Andrew Mellon Foundation
\$275,000 - 10/1/97-9/30/98

Staff Expansion Grant
Edwin Fogelman, Political Science
Japan Foundation
\$38,130 - 9/16/97-6/15/99

Vision and Intraretinal Potentials
Dwight A. Burkhardt, Psychology
NIH, NEI
\$142,019 - 9/30/97-9/29/98

Interracial Contact and Racial Attitudes
Margaret M. Marini, Sociology
National Science Foundation
\$150,164 - 8/15/97-7/31/99

Assessing the Market for Agricultural Economic Information
Terry Roe, Applied Economics
U.S. Department of Agriculture
\$90,000 - 9/17/97-9/30/99

Economic Importance of Minnesota's Poultry Industry
George Morse, Applied Economics
Minnesota Corn and Research Promotion Council
\$5,000 - 10/6/97-11/1/97

Subunit Vaccines to Prevent and Control Porcine Reproductive and Respiratory Syndrome Virus Infections
Anuradha Subramanian, Biosystems and Agricultural Engineering
James E. Collins, Veterinary Diagnostic Medicine
National Pork Producers Council
\$25,000 - 9/1/97-9/1/98

Development of Native Perennial Legume Cropping Systems
Nancy J. Ehlke, Agronomy and Plant Genetics
William Lueschen, Agronomy and Plant Genetics
Donald L. Wyse, Agronomy and Plant Genetics
Minnesota Crop Improvement Association
\$10,000 - 7/1/97-12/31/98

Modulation of Reproductive Efficiency by Prolactin in the Domestic Turkey
Mohamed E. El Halawani, Animal Science
U.S. Department of Agriculture
\$230,000 - 10/1/97-9/30/00

Interference of Late Blight Fungicides with Entomopathogens
David W. Ragsdale, Entomology
Edward B. Radcliffe, Entomology
U.S. Department of Agriculture
\$74,996 - 9/15/97-9/30/99

Development of Potato Cultivars with Disease and Insect Resistance

Edward B. Radcliffe, Entomology
North Dakota State University (USDA Prime)
\$5,000 - 7/1/97-5/31/98

Improved Lactococcal Phage Defenses for More Consistent Dairy Fermentations

Daniel O'Sullivan, Food Science and Nutrition (COAFES)
D. P. Twomey, Food Science and Nutrition (COAFES)
Larry L. McKay, Food Science and Nutrition (COAFES)
U.S. Department of Agriculture
\$200,000 - 9/15/97-9/30/00

Evaluating Potential Grape Rootstocks

Emily E. Hoover, Horticultural Science
James Luby, Horticultural Science
Cornell University
\$10,000 - 5/1/97-4/30/98

Integrated Crop and Soil Management System Controlling Common Root Rot in Pea

Francis L. Pflieger, Plant Pathology
Vincent A. Fritz, Horticultural Science
R. R. Allmaras, Soil, Water, and Climate
U.S. Department of Agriculture
\$75,000 - 9/15/97-9/30/00

Characterization and Regulation of nOED, a Negatively-Acting Genotype-Specific Nodulation Gene from *B. japonicum*

Michael J. Sadowsky, Soil, Water, and Climate
Carroll P. Vance, Agronomy and Plant Genetics
U.S. Department of Agriculture
\$95,000 - 9/15/97-9/30/99

Consortium for Site-Specific Resource Management

Pierre Robert, Soil, Water, and Climate
Leslie Legg, Soil, Water, and Climate
D.J. Mulla, Soil, Water, and Climate
U.S. Department of Agriculture
\$25,000 - 9/1/97-2/28/98

Financial Analysis of Windbreak Renovation

Melvin J. Baughman, Forest Resources
U.S. Department of Agriculture
\$30,000 - 9/18/97-9/30/98

Center for Nonindustrial Private Forestry Education

Melvin J. Baughman, Forest Resources
U.S. Department of Agriculture
\$25,000 - 9/1/97-2/28/98

Positioning Hazels for Large-Scale Adoption

Harold Pellett, Horticultural Science
Kenneth Brooks, Forest Resources
Agricultural Utilization Research Institute
\$13,000 - 8/29/97-10/31/98

Teaching Package for Primary and Middle School Teachers

James L. Bowyer, Architecture and Landscape Architecture
U.S. Department of Agriculture
\$19,300 - 9/25/97-6/30/98

Hydrologic Effects of Land Use Change in Valley Creek

David G. Pitt, Landscape Architecture
Bruce Wilson, Biosystems and Agricultural Engineering
Science Museum of Minnesota
\$83,000 - 10/1/97-5/30/99

Strategies for Increasing the Utilization of Supplemental Security Income Work Incentives to Enhance Employment Results of Transitioning Youth with Disabilities

David R. Johnson, Educational Psychology
U.S. Department of Education
\$999,974 - 10/1/97-9/30/01

Beacons of Excellence: Achieving Exemplary Results for Students with Disabilities in Secondary Education

Teri Wallace, Institute on Community Integration
Susan C. Hupp, Educational Psychology
David R. Johnson, Educational Psychology
U.S. Department of Education
\$249,980 - 10/1/97-9/30/98

Regional and Project Partners Workshops on Congestion Pricing

Lee Munnich, Humphrey Institute
Battelle
\$51,873 - 7/7/97-11/30/97

Minneapolis Systemic Change Initiative in Science

Susan K. Henderson, Extension Classes
Lawrence Rudnick, Astronomy
Minneapolis Public Schools
\$91,191 - 7/15/97-2/28/99

Training Institute: Affirmative Action Library Science Interns

Margaret A. Johnson, University Libraries
U.S. Department of Education
\$70,474 - 10/1/97-9/30/98

Pathways to the Doctoral Degree

Benjamin L. Clarke, Biochemistry and Molecular Biology, Duluth
Edwin W. Haller, Medicine, Duluth
NIH, NIGMS
\$428,378 - 9/30/97-9/29/00

Hierarchical, Parallel Algorithms for Simulating Plant Response to Environmental Stress

George E. Host, Natural Resources Research Institute, Duluth
Harlan W. Stech, Mathematics and Statistics, Duluth
Kathryn E. Lenz, Mathematics and Statistics, Duluth
National Science Foundation
\$380,073 - 10/1/97-9/30/99

Habitat Associations of Birds and Herpetofauna on St. Louis County Lands

Gerald Niemi, Center for Water and Environment, Duluth
Kent L. Montgomery, Natural Resources Research Institute, Duluth
St. Louis County Land Department
\$14,000 - 8/19/97-4/30/98

Facility Expansion - Phase I Design

L. A. Kendall, Industrial and Technical Studies, Duluth
Hibbing Fabricators
\$2,314 - 6/16/97-7/31/97

Predicting/Locating Deeply Buried Sites

George R. Rapp, Jr., Archaeometry Laboratory, Duluth
St. of Minn., Department of Transportation
\$65,070 - 9/22/97-8/30/98

American Indian Students in Computer Science and Engineering

Donald Crouch, Computer Science, Duluth
Fond Du Lac Community College
\$84,895 - 9/1/97-8/31/99

Darland Intergenerational Program, Tutoring and Mentoring Services to K-12 Students

J. T. McCarthy, Education and Human Service Professions, Duluth
Kopp Family Foundation
\$1,000 - 7/1/97-6/30/98

Glensheen Roof Replacement - Main House

Mary M. Evans, Glensheen, Duluth
Minnesota Historical Society
\$50,000 - 6/1/97-8/31/98

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>

	<u>name</u>	<u>number</u>	<u>e-mail</u>
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
	Liz Li	624-0810	liz-l@ortta.umn.edu
USDI (Non-IT), St. of Minn, DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	TBA	624-5571	@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed.	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	TBA	625-1359	andy@ortta.umn.edu
NSF (non-IT), MnDOT	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	Doug Johnson	624-5007	doug@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moira Keane	626-5654	moira@ortta.umn.edu

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(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

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RESEARCH REVIEW

Office of Research and Technology Transfer

January 1998

The Telescope Moves Out of the Garage

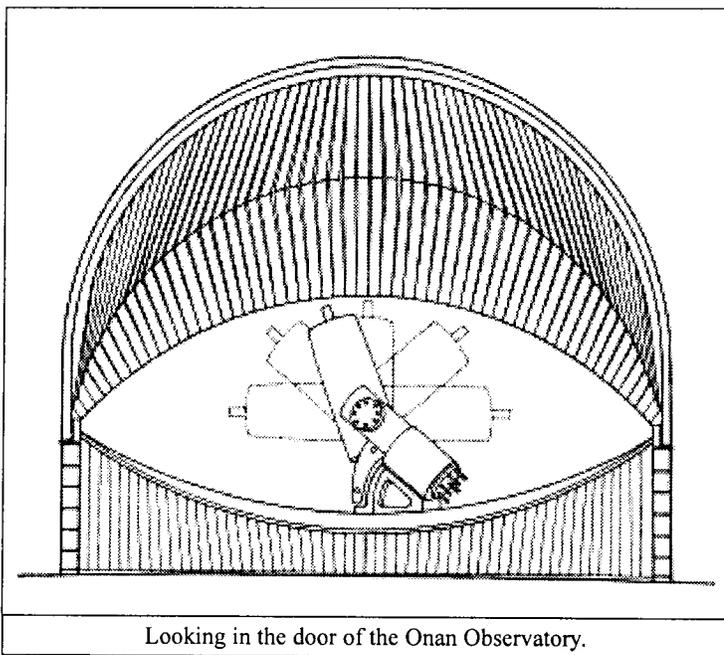
Local Astronomical Society Nearly Finished Building Public Observatory

For 17 years, the Minnesota Astronomical Society has lovingly hoarded one thousand pounds of “Cassegrain” telescope, moving it from member’s garage to member’s garage, patiently working towards a permanent home. The ‘scope has gathered dust in Burnsville, Forest Lake, Arden Hills. Now it’s in Circle Pines, at Dave Runkle’s house, where he and John Marchetti are rebuilding its electronic and mechanical drive systems. They also plan to give the aluminum fixtures a new coat of paint. In Coon Rapids, Rod Luhmann is “refiguring” the 16-inch primary mirror—reshaping the surface just a little to improve the focus.

“We hope to crank it up after the holidays, when we get all the pieces in one place,” Mike Kibat said in December. “We’ll have it restored better than new.” Come spring, the Astronomical Society will move the telescope one more time, to the public observatory they’re building in Baylor Regional Park, about 25 miles southwest of the Twin Cities.

The Society’s motives are simple and generous—they want to share their telescope with anyone and everyone they can persuade to stop and peek through the eyepiece. “When you get a kid to the eyepiece and show him the Orion Nebula, it’s like the thrill of seeing it yourself for the first time,” as John Treadwell puts it.

Kibat tells the story of a seventh grader at Hudson Middle School (Hudson, Wisc.) who tried to talk her way out of her science class star party. She’d prefer to stay home, she thought. But someone made her come anyway, and Kibat got to help her “make the connection” as he calls it. While looking through a telescope, she suddenly understood—not just abstractly, but in some concrete, tactile way—that there



Looking in the door of the Onan Observatory.

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 7

January 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in R campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Animal Care and Use Committee

Timothy Ebner is New Chair of IACUC

Timothy Ebner, professor of physiology and neurosurgery, is the new chair of the Institutional Animal Care and Use Committee (IACUC). He replaced David Reynolds, professor of surgery, in that role on November 11.

"I took the job," says Ebner, "because I really feel a need for a faculty member heavily engaged in animal research to further the goal of better communication between the committee and the faculty."

Ebner has not been a member of IACUC before, and he acknowledges having sometimes been one of the many outsiders who give the committee grief. He also emphasizes that "the present members are dedicated, hard-working individuals who have made a lot of improvement over the last few years in the way the committee functions."

In an interview, Ebner described three goals for IACUC: One, to better inform the faculty about what the committee does and why, particularly why it asks the questions it does. Two, to continue making IACUC more faculty friendly—by improving turn-around of documents, for example. And three, to achieve those two goals while continuing to ensure that University animals are treated well.

"There are something like 2,500 animal protocols at this institution, every one of them subject to the federal regulations," Ebner said. "The committee needs to meet the federally mandated standards, insure that animals are properly monitored, and pain and suffering minimized, and make it easier for faculty to do their research."

Ebner is a professor in the departments of neurosurgery and physiology, and he directs the graduate program in

neuroscience. He joined the neurosurgery faculty in 1979, the same year he earned an M.D., and also a Ph.D. in physiology with a minor in mathematics, all from the University. He earned a B.S. in biochemistry from the University in 1971.

In his research, Ebner seeks to describe the role of the cerebellum in controlling the movement of limbs. His chief research subjects are rhesus monkeys taught to perform various tasks while Ebner and colleagues record the firing of neurons.

The monkeys work with what Ebner calls a "manipulandum": "It's like a video game," he explained, "with a complicated joy stick like a jet pilot's. We present the monkeys with on-screen tasks like tracking objects and moving objects." The monkeys are good at the games, he adds, often better than people.

The results indicate that specific cells in the cerebellum may be crucial to specifying the velocity, acceleration, and direction of the monkeys' arm movements. Understanding the correlations, Ebner hopes, will increase our understanding of both normal cerebellar function and the movement disorders that result from cerebellar disease.

Ebner's work is supported by National Institute of Neurological Disorders and Stroke (NINDS) and the National Institute of General Medical Sciences (NIGMS). His recent publications include *Acquisition of Motor Behavior in Vertebrates*, which he edited with J. Bloedel (MIT Press, 1996); and "Relationship of Cerebellar Purkinje Cell Simple Spike Discharge to Movement Kinematics in the Monkey," by Q.G. Fu, D. Flament, J.D. Coltz, and T. Ebner (*Journal of Neurophysiology* 78.1 (1997): 478-491).

by Phil Norcross

Research Animal Resources

Accreditors' Site Visit will Assess Animal Care at UM

The Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC) will visit the Academic Health Center and the College of Liberal Arts during the week of February 23rd.

Personnel working with or caring for research and teaching animals within the AHC and CLA should be prepared for a thorough review of their facilities, staff, and programs.

The health sciences have been AAALAC accredited since 1984, but this will be the first AHC site visit to include the College of Veterinary Medicine. The Duluth Animal Services facility is separately accredited by the AAALAC.

Site visitors will assess awareness and participation of staff in the occupational health program and in training programs, as well as adherence to environmental health and safety policies. Surgery laboratories for both large animals and rodents will be visited. Principal investigators are asked to prepare their staff and facilities appropriately.

For advice or further information, please contact Research Animal Resources at 624-9100.

The University is looking forward to the thorough review and constructive suggestions that constitute an AAALAC site visit.

by Cynthia Gillett, director, RAR

UM Conflict of Interest Policy Likely to Change this Winter

At the Urging of NIH, Vice President for Research Proposes Revision

According to a proposal now under consideration by governance committees, the Board of Regents will soon be advised to make a number of changes to its conflict of interest policy.

The conflict of interest policy encourages interaction between the University and the private sector, while ensuring that any potential conflict of interest is disclosed and prevented from improperly affecting University activity.

According to a draft dated December 17, 1997, the principal changes in the proposal are as follows:

- The revised policy will apply to union and civil service employees, and to students, well as to academics.
- Disclosure will be required for ownership of an outside business by an employee and family that totals either 5 percent or \$10,000-worth of the business, or outside income of \$10,000 per year or more. Currently, those thresholds are 1 percent ownership and \$5,000 per year for an employee or any one family member.
- Royalties from other universities and income from publications will no longer be exempt from disclosure requirements.
- Gifts to the University from an employee's business need to be disclosed if they are \$1,000 or more in a year and if the employee should know the gifts will benefit the employee's work at the University.
- The University is responsible to guard against conflicts of interest in its contractors, subgrantees, and collaborators.

The proposal is largely the work of the Office of the Vice President for Research and the Office of General Counsel, and comes at the urging of the National Institutes of Health. The new language has been approved by the Senate Research Committee. Before it goes to the president and the regents, it will be reviewed by the Senate's faculty affairs and consultative committees, then the full Senate.

More precisely, the proposal suggests the following changes:

The current policy consistently speaks of "academic employees." The proposal strikes the word "academic," and to the definition of University employee it adds bargaining unit and civil service employees. The proposal also makes clear in two new passages that the policy applies to anyone—salaried or not, and including students—in a position to influence the design, conduct, or reporting of research, scholarship, teaching, public service, or purchasing.

Disclosure of a potential conflict of interest is required when an employee and immediate family have aggregate equity interest in a business of 5 percent or more or \$10,000-worth or more; when their business is expected to provide them aggregate income of \$10,000 over the next year; or when they have royalty commitments that are expected to earn \$10,000 or more per year in future years. The current policy uses corresponding thresholds of 1 percent, \$5,000, or commitment for any future royalties, for an employee or any one family member.

In its list of activities that *cannot* constitute conflict of interest, and thus needn't be disclosed, the current policy includes "royalties and honoraria for published scholarly works, occasional lectures, and other writings or creative works." The proposal strikes those words and replaces them with "income from seminars, lectures, or teaching engagements sponsored by public or nonprofit entities."

In the same list, where current policy lists "honoraria" for serving as a reviewer for "academic, governmental, or not-for-profit entities," the proposal substitutes "income" for reviewing for "public or nonprofit" entities.

And also in the list of activities that are *not* potential conflicts of interest, the proposal includes royalties from the University of Minnesota, but strikes out royalties from other institutions.

In the current policy, gifts to the University need to be disclosed *when* they come from a business in which an employee has financial interest *or when* they exceed \$1,000 in a year. The proposed new language says gifts to the University from an employee's business need to be disclosed *if* they are \$1,000 or more in a year *and* the employee should know the gifts will benefit the employee's work at the University.

A new paragraph in the proposal states that the University, "to the extent required by the sponsor," will take "reasonable steps" to insure that sub-grantees, contractors, or outside collaborators disclose and review potential conflicts of interest. Such steps may include requiring compliance with University policy or getting assurance that outside investigators comply with federal or sponsor regulations.

Regarding the University's responsibility to report potential conflicts to sponsors, the proposal includes a new paragraph to say that, before sponsored research funds are spent, deans will inform the vice president for research of potential conflicts of interest and how they will be "managed, reduced, or eliminated." Then the vice president

will notify the sponsor "to the extent required by the sponsor."

Similarly, under the heading "Disciplinary Actions," the proposal adds a paragraph to say that, if an employee fails to comply and biases sponsored research as a result of a conflict of interest, the dean must notify the vice president for research, who must notify the sponsor about the appropriate corrective action.

The proposal also adds a line to say that financial disclosures "will be accessible to sponsoring agencies as required by federal regulations or sponsor policies."

In the proposed language, employees can request a waiver from disclosure requirements provided they are not principal investigators, co-investigators, or "responsible for, or in a position to influence, the design, conduct, or reporting of the research or other activity." The current language provides the same opportunity to anyone "not in a position to influence the accuracy of the outcome of the research or the timely and accurate dissemination of the results."

Regarding the relation among the conflict of interest policy and other University policies, such as those regarding technology transfer, consulting, and tenure, the proposal strikes out two sentences: "This policy supersedes all others with respect to matters contained herein" and "This policy does not supersede the Board of Regents policy, 'Patent and Technology Transfer' or any future policies on intellectual property."

The proposed changes to the current policy include new reference to federal and state regulation and statute: "Employees must comply with all state and federal laws related to conflict of interest and objectivity in research," it says, then it cites U.S. Public Health Service regulations in 42 CFR 50 and 45 CFR 94, the National Science Foundation *Grant Policy Manual* 510 and 60 FR 35820, and Minnesota statute 15.43, "Acceptance of Advantage by State Employee." Statute 15.43 is excerpted at the end of the current policy; it is summarized in the middle of the proposed new policy.

In the proposal, definitions of immediate and extended family refer to "dependents," not "dependents for tax purposes."

Reflecting changes in University structure, "academic vice president" in the current policy becomes, in the proposal, "executive vice president and provost."

In a number of instances, without substantively changing the meaning of the text, the proposal re-arranges the order of paragraphs, rephrases and adjusts headings, and simplifies sentence structures.

by Phil Norcross

Research Animal Seminars

Presented by UM Research Animal Resources

Thursdays at 3:00 pm

(note new time)

Phillips-Wangenstein Room B302

Call 624-9100 to reserve a seat

January 22

Relationship between Gut Permeability and Bacterial Invasion

by Carol Wells, Laboratory Medicine and Pathology

February 26

Heterogeneous Macrophage Antimicrobial Effector Function

or

Not all Macrophages are Created Equal

by Mark Rutherford, Veterinary PathoBiology

March 26

Platelet/Neutrophil Interaction in Disease

by Douglas Weiss, Veterinary PathoBiology

April 23

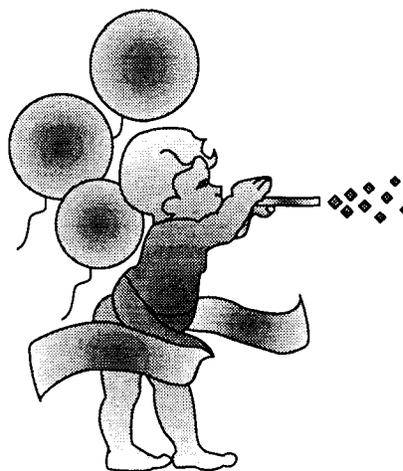
Muscle Research (preliminary title)

by Stephanie Valberg, Clinical and Population Science

May 28

(title to be announced)

Marilyn Carroll, Psychiatry



Telescope

(continued from page 1)

were 100 billion stars in the galaxy Kibat showed her, and 100 billion galaxies out there in the rest of the sky.

"By the end of the year, she was one of teacher Larson's most enthusiastic science students," says Kibat. "I get the biggest kick when people make the connection."

The MAS is entirely amateur astronomers and volunteer public educators. In some cases, you can see a connection to their professions, in other cases not.

Marchetti works as a mechanical engineer, building

experimental equipment for the University. Runkle is an electrical engineer for Carl Zeiss IMT Corporation, which builds "industrial measuring technology" (Zeiss provides some of the electronics hardware Runkle installs on the telescope). Treadwell, past chair of the MAS observatory committee, is a clerical worker in University Business Services. Kibat, 10 years a member of the MAS and one of the big pushes behind the observatory, identifies himself as information services director for Health Partners, twice past president of MAS, and "crazy hobbyist."

Their story, of the hoarded telescope and the volunteer-built observatory, is a matter of luck, long patience, and admirable collaboration.

The telescope came first. UM Duluth was closing down its campus observatory in 1980 because of city-light pollution, and sought a good home for the 10-year-old telescope. The Society borrowed from the family of one of its members, William Larson, and bought the telescope for about \$6,000. Given the size and quality of the instrument, according to Runkle, that was so cheap it approached being a donation to the Society.

Carver County and Baylor Regional Park signed on in 1988 by leasing to the MAS—at \$20 for 20 years—a hill-top overlooking Eagle Lake.

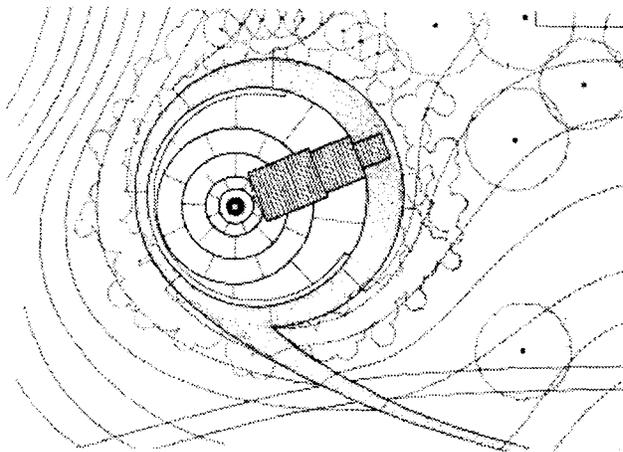
Next, one of the amateur astronomers happened to meet Mary Hatton-Onan when they crossed paths at the children's day care center he operated. Her father, Charles Warren Onan, also liked to show children the

stars through his telescope. One thing led to another, and Hatton-Onan arranged for the Onan Family Foundation to give the MAS \$20,000 in 1991 for an observatory and public outreach.

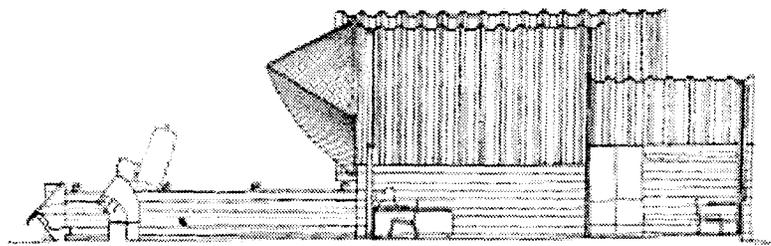
Then in 1994, Ralph Nelson volunteered to design the observatory. Nelson, adjunct faculty member in the University's Department of Architecture and principal of a design organization named LOOM, also recruited Dave Mensing, who teaches construction trades at Hennepin Technical College. Mensing was accustomed to teaching students to build temporary walls behind their school, then immediately tear them down. He was happy to have them work on something permanent.

"That," said Kibat, referring to Nelson's and Mensing's help, "is when we decided we could build the observatory." Last November, when the construction season ended, the foundation and walls were finished, and the roof was on order.

The Onan Observatory that Nelson designed is based on farm-building technology. Low masonry walls will support three nesting arches of corrugated steel—Papa Bear, Mama Bear, and Baby Bear they're called, even on the blueprints. The telescope is bolted to a concrete founda-



Aerial view of the observatory.

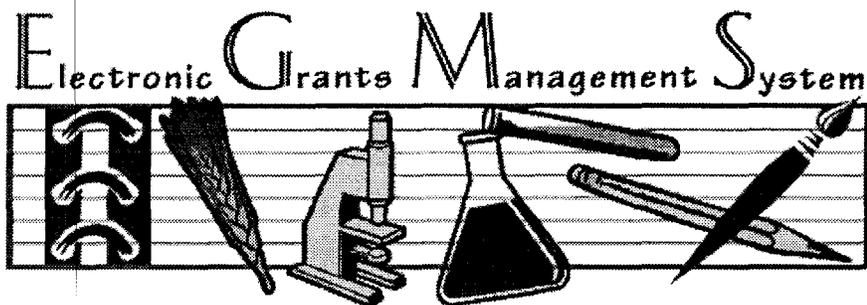


With part of the roof rolled away, the telescope is exposed to the sky.

tion that extends six feet into the ground under Papa Bear.

To let the telescope see the sky, Papa Bear rolls away on wheels and rests above Mama Bear. In front of Papa Bear and the telescope is a broad, circular plaza where people can gather. On the outside and back wall of Baby Bear is a giant "planisphere," a star chart that turns to match the yearly revolution of the sky. The entire observatory is accessible to wheel chairs. The telescope's blind side, the

{ continued on page 8 }



Grants Management Project

EGMS Provides Proposal Preparers with Consistency, Compliance, and Communication

The University's new Electronic Grants Management System provides consistency that makes writing grant proposals more efficient and less error prone; it speeds and simplifies the communication of data from one office to the next, one machine to the next, or one use to the next; and it ensures compliance with federal requirements, which reduces the risk of costly error and improves the University's credibility with sponsors.

See the EGMS system at <http://egms.ortta.umn.edu/>.

Consistency

EGMS provides quick, accurate calculations for budget items including fringe benefits, indirect costs, and inflation.

The common, repetitive parts of proposals, once completed on EGMS the first time, can be easily and accurately reproduced for later proposals, and any given proposal can be cloned and edited for later submissions.

Because budget data is entered just once for multiple uses, accuracy increases while keyboard labor decreases.

Staff of Sponsored Projects Administration (SPA) will not have to review and double-check EGMS documents as thoroughly as paper ones.

The institutional details on proposal face pages—IRB agreement numbers, officials' names and addresses—will automatically be correct, saving the time SPA staff now spend to correct them.

When University administrators sign and take responsibility for a proposal created with EGMS, they can be confident the document is sound, the information correct.

Information regarding "other support" will be held in a single database, accessible to departments and deans.

Institutional data can be gathered in one place for consistent delivery all across the University, from investigators, to deans, to ORTTA, to CUFS.

Communications

Data entered into a proposal can inform an electronic "Proposal Routing Form" (formerly the University's BA-23 form), which can be electronically routed to the various University officials who need to approve it.

In a relatively automatic process invisible to proposal writers, budgets are sorted, coded, and otherwise translated to fit sponsors' budget categories, electronic Notices of Grant Award (NOGAs), and the University's CUFS accounting system.

At almost every step of proposal writing, EGMS provides direct links to helpful instructions, definitions, forms, and regulations—University forms for biosafety approvals, for example, and federal documents from the Office of Management and Budget.

Data regarding one's professional career, once entered into the "expertise database" on EGMS, becomes available to proposals and can be extracted for other purposes, such as vitae or expertise databases outside the University.

EGMS prepares the University for the time when proposals will be transmitted to federal sponsors electronically, instead of on paper.

Compliance

EGMS prompts proposal preparers when federal or University regulations require justification of particular budget items.

The terms and conditions of awards will be electronically transmitted to investigators before accounts are established.

Come midsummer, a database will supply investigators and departments with easy access to post-award information about approvals they might need, what equipment they may or may not purchase, and what reports are due when.

EGMS answers the concerns expressed by the National Institutes of Health that the University needs systems to better assist its staff in grants management and stewardship of federal funds.

Telescope

(continued from page 6)

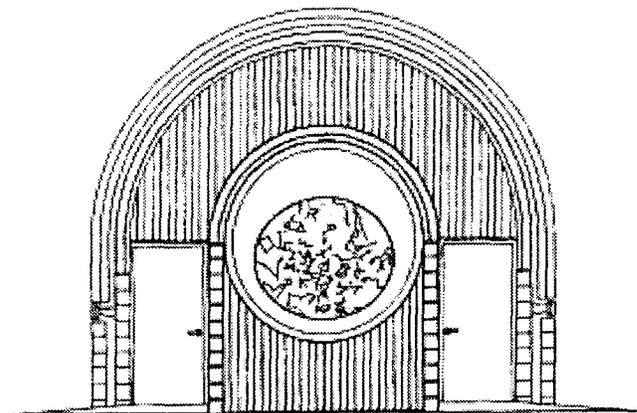
side occupied by the building, is on the northeast, where the light of the cities makes it hard to see anyway.

The rolling steel-arch roof is better than the traditional observatory dome, Runkle explains, because it leaves the telescope outside, at the same temperature as the weather; in a dome, waves of heat tend to escape through the roof-hole and blur a 'scope's view.

Electric power at the observatory is all 12-volt DC, so the MAS can run it from batteries and a portable generator until they raise enough money to run a power line.

The MAS plans to open the Onan Observatory to the public next July or August. "I see stages," says Runkle. "First we get it turned on and open to the public a couple days a month. When things are working comfortably, we expand to family nights and really large star parties." And over the long-term, Runkle works to wire the telescope for "computer-numeric control," meaning children will be able operate it from their classrooms via the internet.

by Phil Norcross



The star chart on the outside wall of the observatory.

In order to complete the observatory the MAS needs to raise another \$7,500 by spring. To get AC power to the site, they need \$11,000 on top of that. So Kibat invites offers of help. See <http://www.visi.com/~kibatME/onan/Onan.htm> or write to him at KibatME@visi.com.

To learn about upcoming MAS meetings and star parties, phone 612/649-4861, see <http://www.geom.umn.edu/~slevy/mas>, or write to Dave Runkle, MAS outreach chair, at drunkle@millcomm.com.

Sponsored Projects Administration

Frequently Asked Questions About Sponsored Projects

Question: Can I encumber funds for the purchase of goods or services that will not be delivered until after a grant terminates? And will Sponsored Financial Reporting pick up those charges on the final invoice?

Answer: No and no.

Encumbering funds before a grant ends does not guarantee that the charges will be allowable. If you anticipate that supplies will not be delivered *and consumed*, or services provided, before a grant ends, you should not be charging them to the grant; otherwise it is questionable whether the grant received their full benefit. In the case of equipment, SPA does not typi-

cally allow equipment purchases in the last two months of a grant, again because the relative benefit is small compared to what the item costs, and the charge does not appear to be reasonable.

Sponsored Financial Reporting looks at the shipping date or dates of service on invoices when they do final closeouts. If items were not shipped or services were not provided until after a grant ended, SFR will ask you to remove the charge. An exception may be encumbering funds for future publication costs, but check the terms and conditions for your granting agency, or call your grant administrator.

Ginny Olson, Sponsored Projects Administration

Graduate School News

Grant-in-Aid of Research, Artistry, and Scholarship Program

The Grant-in-Aid of Research, Artistry, and Scholarship Program is a competitive small-grants program available to faculty of the University of Minnesota. Awards for 1997-98 were made in spring 1997 with a July 1 starting date or in fall 1997 with a December 16 starting date. The deadlines for 1998-99 grants are March 2 and October 5, 1998. Application materials are available via the web at <http://www.research.umn.edu/research/fundsrc.html> or you may e-mail facgrant@tc.umn.edu or call 612/625-2356.

Some of the grants awarded for 1997-98 are listed below. The remainder will be listed in the February *Research Review*.

Mitchell Abrahamsen, Assistant Professor	\$16,000	Elizabeth Boyle, Assistant Professor	\$16,075
<i>Department of Veterinary PathoBiology</i>		<i>Department of Sociology</i>	
Bovine T cell responses to <i>Cryptosporidium</i>		Human rights claims, human rights abuses: The influence of national and international factors on citizens' resort to the international arena	
Mustafa al'Absi, Assistant Professor	\$23,920	Jeffrey Broadbent, Associate Professor	\$16,016
<i>Duluth School of Medicine</i>		<i>Department of Sociology</i>	
Hypertension and adrenocortical responses to psychological stress		Comparing environmental policy networks	
Jean Allman, Associate Professor	\$22,272	Kathleen Call, Assistant Professor	\$15,660
<i>Department of History</i>		<i>School of Public Health</i>	
Of rituals, resistance and migration: A social history of the Tonna'ab shrine, 1897-1997		The implications of Medicaid change for children's health	
Andrew Atkeson, Associate Professor	\$15,120	Aristidis Charonis, Associate Professor	\$25,000
<i>Department of Economics</i>		<i>Department of Laboratory Medicine & Pathology</i>	
Exchange rates in imperfect markets		Biological significance of tubulointerstitial nephritis antigen	
Andrea Berlin, Assistant Professor	\$10,154	John Chipman, Regents' Professor	\$9,360
<i>Department of Classical & Near Eastern Studies</i>		<i>Department of Economics</i>	
The Hellenistic and Roman pottery from Gamla, Israel		A study of endogenous protection: German tariff policy from 1862 to 1897	
David Biesboer, Associate Professor	\$16,420	Donna Chollett, Assistant Professor	\$14,320
<i>Department of Plant Biology</i>		<i>Division of Social Sciences, Morris</i>	
Isolation and purification of antimicrobial extracts from plants		Rural crisis and neoliberalism: An anomaly in the sugar sector?	
Donna Bliss, Assistant Professor	\$21,861	Gregory Cuomo, Assistant Professor	\$17,226
<i>School of Nursing</i>		<i>Department of Agronomy & Plant Genetics</i>	
Fecal incontinence: Epidemiology and self-care in elders at managed care clinics		Integrated pasture research for Minnesota	
Derryl Block, Assistant Professor	\$10,080	Anath Das, Professor	\$25,000
<i>School of Nursing</i>		<i>Department of Biochemistry, CBS</i>	
Regional clinician tobacco assessment/intervention practices		Analysis of the <i>Agrobacterium</i> VirB6 protein	
Carol Bock, Associate Professor	\$2,520	Margaret Davis, Regents' Professor	\$20,000
<i>Department of English, Duluth</i>		<i>Department of Ecology, Evolution, & Behavior</i>	
The author in the 1830s: The case of <i>Blackwood's Magazine</i>		Forest stand invasion and its influence on migration rate	
Linda Boland, Assistant Professor	\$13,232	David DeMuth, Instructor	\$18,952
<i>Department of Physiology</i>		<i>Division of Technical Studies, Crookston</i>	
Cloning and expression of ion channel subunits		High-energy particle research at Crookston	
		Zigang Dong, Assistant Professor	\$22,000
		<i>Hormel Institute</i>	
		Molecular mechanisms of anti-tumor promotion	
		Maria Driver, Assistant Professor	\$17,271
		<i>Department of Computer Science, Duluth</i>	
		Parallel solution of large-scale general linear systems	
		Joanne Eicher, Regents' Professor	\$4,955
		<i>Department of Design, Housing, & Apparel</i>	
		Beads and trade from Venice to West Africa	
		Anthony Faras, Professor	\$20,000
		<i>Department of Microbiology</i>	
		Supplementary funds for purchase of protein sequencer	

Graduate School News

Marie Farrell, Instructor	\$16,216	Ishtiyaque Haji, Assistant Professor	\$6,000
<i>Department of Geography, Duluth</i>		<i>Division of Humanities, Morris</i>	
Pedoarchaeological investigations in the Maya lowlands of Mexico and highlands of Guatemala		Culpability and the mentally ill offender	
Janet Fitzakerley, Assistant Professor	\$25,000	Gary Hallman, Associate Professor	\$10,000
<i>Duluth School of Medicine</i>		<i>Department of Art</i>	
Tissue printing of cochlear nucleus neurons		High-quality digital imaging output on large-format inkjet printers	
Patricia Frazier, Associate Professor	\$10,336	Morton Harris, Professor	\$3,000
<i>Department of Psychology</i>		<i>School of Mathematics</i>	
Domestic assault victims' participation in the prosecution of their assailants		Equivalences in finite group representation theory	
Pieranna Garavaso, Associate Professor	\$8,000	Mohammed Hasan, Assistant Professor	\$16,020
<i>Division of Humanities, Morris</i>		<i>Department of Electrical & Computer Engineering, Duluth</i>	
Russell and the distinct fields of mathematics, mathematical philosophy, and the philosophy of mathematics		Fast algorithms for DOA and sinusoidal frequency estimation problems	
G. Scott Giebink, Professor	\$19,412	George Heimpel, Assistant Professor	\$21,640
<i>Department of Pediatrics</i>		<i>Department of Entomology</i>	
Antibiotic transport mechanisms across middle ear membranes		Biased sex ratios in ladybird beetles	
Allen Goldman, Professor	\$19,120	Marshall Hertz, Professor	\$20,000
<i>School of Physics & Astronomy</i>		<i>Department of Medicine</i>	
Giant piezoelectric effect and phase transitions in a quantum paraelectric		Immunopathogenesis of chronic lung rejection	
Richard Goldstein, Regents' Professor	\$20,000	Randall Hicks, Associate Professor	\$13,735
<i>Department of Mechanical Engineering</i>		<i>Department of Biology, Duluth</i>	
Investigation of thermal convection in gases under pressure at high Rayleigh numbers		Comparative analysis of archaeal nucleic acids in picoplankton from the Great Lakes	
Arun Goyal, Assistant Professor	\$25,210	Marc Hirschmann, Assistant Professor	\$15,120
<i>Department of Biology, Duluth</i>		<i>Department of Geology & Geophysics</i>	
Enzymes of glycerol synthesis for stress tolerance in plants		Melt interconnectivity in garnet pyroxenite	
Dale Gregerson, Professor	\$19,950	Raymond Hozalski, Assistant Professor	\$16,120
<i>Department of Ophthalmology</i>		<i>Department of Civil Engineering</i>	
Therapy of experimental proliferative vitreoretinopathy		Effect of biofilm on removal of <i>Cryptosporidium</i> and <i>Giardia</i> in drinking water filters	
John Griffith, Assistant Professor	\$3,000	Richard Hsung, Assistant Professor	\$22,770
<i>Department of Finance & Management Information Sciences, Duluth</i>		<i>Department of Chemistry</i>	
Executive stock options and their agency costs		Synthesis of potential therapeutics for the treatment of Alzheimer's disease	
Harold Grotevant, Professor	\$19,074	Allen Isaacman, Professor	\$17,340
<i>Department of Family Social Science</i>		<i>Department of History</i>	
Mental health of adopted adolescents in a nationally representative sample		A social and environmental history of the building of Cabora Bassa Dam 1968-1996	
Sun-Wei Guo, Associate Professor	\$19,460	Patricia James, Assistant Professor	\$8,496
<i>School of Public Health</i>		<i>General College</i>	
Genetic analysis of bitterness-tasting ability in humans		Learning and teaching artistic creativity in developmental education	
Laura Gurak, Assistant Professor	\$8,060	Murray Jensen, Assistant Professor	\$5,040
<i>Department of Rhetoric</i>		<i>General College</i>	
Wired speech, wired gesture: From oral delivery to electronic elocution		Technophobic students' reactions to a technology-rich science course	
		Robert Jones, Professor	\$15,000
		<i>Department of Agronomy & Plant Genetics</i>	
		Purchase of a Coulter Epic XI flow cytometer	

Graduate School News

Merrie Kaas, Assistant Professor	\$16,348	Alice Larson, Professor	\$14,620
<i>School of Nursing</i>		<i>Department of Veterinary PathoBiology</i>	
Depression in ALFs: Prevalence in newly admitted residents		Role of zinc in the study of pain	
Deborah Kallick, Assistant Professor	\$16,460	Tucker LeBien, Professor	\$21,690
<i>College of Pharmacy</i>		<i>Department of Laboratory Medicine & Pathology</i>	
Multinuclear NMR of functional segments of tRNA		The cyclin/CDK/Rb pathway in lymphoid leukemia	
Sagarika Kanjilal, Assistant Professor	\$10,000	Stanford Lehmborg, Professor	\$15,120
<i>Department of Dermatology</i>		<i>Department of History</i>	
Molecular epidemiology of multiple primary nonmelanoma skin cancer		English cathedrals, 1700-1800	
Mary Katsiaficas, Professor	\$20,000	Jack Lewis, Professor	\$15,000
<i>Department of Art</i>		<i>Department of Orthopaedic Surgery</i>	
Development of a multimedia digitized video opera entitled "imagine a world without winter"		Micro bionix materials test machine	
Terukò Kawashima, Assistant Professor	\$13,169	Perry Li, Assistant Professor	\$15,120
<i>Institute of Linguistics & Asian & Slavic Languages & Literatures</i>		<i>Department of Mechanical Engineering</i>	
Writing margins: The textual construction of gender in tenth to thirteenth century Japan		Machines that cooperate with humans	
Susan Keirstead, Assistant Professor	\$14,956	Robert Lloyd, Assistant Professor	\$15,443
<i>Department of Ophthalmology</i>		<i>Department of Psychology, Duluth</i>	
In vivo imaging of responses of retinal ganglion cells to optic nerve injury		Antidepressant efficacy of natural analogues of thyrotropin-releasing hormones	
Seong-Gi Kim, Assistant Professor	\$18,390	Ellen Longmire, Associate Professor	\$19,983
<i>Department of Radiology</i>		<i>Department of Aerospace Engineering & Mechanics</i>	
Physiological basis of functional MRI signals		Experiments on pinch-off in immiscible liquid/liquid jets	
Terry Kinney, Assistant Professor	\$15,000	William Lueschen, Professor	\$17,916
<i>Department of Speech-Communication</i>		<i>Department of Agronomy & Plant Genetics</i>	
The effects of hate speech on adolescents		Native perennial legumes to diversify cropping systems	
Paul Kiprof, Assistant Professor	\$15,200	Ian MacRae, Assistant Professor	\$12,000
<i>Department of Chemistry, Duluth</i>		<i>Department of Entomology</i>	
Acquisition of a workstation for quantum chemical calculations		Precision integrated pest management	
Eric Klinger, Professor	\$10,660	Richard Maclin, Assistant Professor	\$15,320
<i>Division of Social Sciences, Morris</i>		<i>Department of Computer Science, Duluth</i>	
Emotion, motivation, and cognition		Producing accurate classifier ensembles for real-world problems	
Sally Gregory Kohlstedt, Professor	\$16,120	Chad Marsolek, Assistant Professor	\$21,620
<i>Department of Geology & Geophysics</i>		<i>Department of Psychology</i>	
Gender on display in nineteenth century museum of natural history		Perceptual-motor sequence learning of general regularities and specific sequences	
Uwe Kortshagen, Assistant Professor	\$22,945	Ronald Martinez, Associate Professor	\$9,560
<i>Department of Mechanical Engineering</i>		<i>Department of French & Italian</i>	
Dynamics of pulsed radio frequency plasmas		Statecraft and stagecraft in the Italian Renaissance (1400-1595)	
Thomas Lancaster, Professor	\$7,560	Barbara Martinson, Assistant Professor	\$8,960
<i>School of Music</i>		<i>Department of Design, Housing, & Apparel</i>	
Funding to produce computer-generated scores of my editions of motets by Lassus		Flights of fantasy: The illustrations of Patten Wilson	
Alex Lange, Assistant Professor	\$22,120	Laura Mauro, Assistant Professor	\$23,474
<i>Department of Biochemistry, Medical School</i>		<i>Department of Biochemistry, Medical School</i>	
Regulation of glucose-6-phosphatase gene expression by glucose and fructose-2,6-bisphosphate		Tyrosine phosphatases in the regulation of cadherin-catenin cell adhesion	
		Kevin Mayo, Associate Professor	\$12,600
		<i>Department of Biochemistry, Medical School</i>	
		Rationally designed bactericidal and endotoxin neutralizing peptides	

The AAAS Annual Meeting and Science Innovation Exposition

February 12-17, 1998

Pennsylvania Convention Center and Philadelphia Marriot Hotel

The American Association for Advancement of Science meets in Philadelphia in February. The meeting's preliminary schedule, as of October 30, listed the following speakers from the University of Minnesota.

For more information, see <http://www.aaas.org/meetings/scope/index.htm>

Insights to Pain and Its Management

Friday, February 13, 9:00 am to 12:00 noon

Understand the adaptive changes that occur during periods of long-term, nonphysiological pain, and how these might be used to develop rational therapy.

Patrick W. Mantyh, Department of Preventive Sciences, will speak on "Physiological and Pathological Roles of Dynorphin in Pain."

Toward Public Accountability of Federally Funded Research and Development

Friday, February 13, 2:00 pm to 5:00 pm

The moderator will be Ronald L. Phillips, UM Regents Professor in Agronomy and Plant Genetics.

Examine how federal science agencies and public universities are responding to the call for accountability through clear research goals, measurable performance indicators, priority setting, and assessment of outcomes.

Government, Academia, and Industry in the History of Computing in the Sciences

Saturday, February 14, 9:00 am to 12:00 noon

Organized by Robert W. Seidel and Anne Fitzpatrick of UM's Charles Babbage Institute of Computer History.

Explore the technical and social factors that have influenced the spread of computing in the sciences and in society.

Paradigms for the Sciences: Past, Present, and Future

Saturday, February 14, 9:00 am to 12:00 noon & 3:00 pm to 6:00 pm

Hear about the insights gained from historical investigations and philosophical analyses in the physical, biological, and mathematical sciences.

In the afternoon segment, John Beatty, historian of science in the Department of Ecology, Evolution, and Behavior, will speak on "The Biological Sciences."

Exploring the Frontiers of Microscopy: Scanning Technologies

Saturday, February 14, 3:00 pm to 6:00 pm

Learn about the principles of design, operation, utility, and applicability of the newest microscopic technologies and their potentials for application to such fields as biology and materials science.

E. Dan Dahlberg, School of Physics and Astronomy, will speak on "Micromagnetics and Magnetic Force Microscopy."

Evolving Expectations for Scholarship and Accountability in University Programs

Saturday, February 14, 3:00 pm to 6:00 pm

Organized by C. Eugene Allen, director of UM's Agricultural Experiment Station.

Hear speakers describe the efforts at different universities that have redefined scholarship and revised promotion and tenure guidelines, designed ways of evaluating and rewarding teaching, and developed strong public outreach programs.

Allen will speak on "Research University Program Accountability to Society."

It's Written in Stone:

Using Geologic Records to Understand the Impact of Human Activity

Saturday, February 14, 3:00 pm to 6:00 pm

Find out how the history of human activity is preserved in the geologic record and how such information can aid in predicting the effect of human actions over long time periods.

Roger L. Hooke, Department of Geology and Geophysics, will discuss the "Human Impact on the Landscape: Changes through Time."

Advocating Scientific Literacy:

A History of the Future

Sunday, February 15, 3:00 pm to 6:00 pm

Explore the changing values and objectives of what is termed "scientific literacy" from the time of AAAS's founding to the present.

Sally Gregory Kohlstedt, historian in the Department of Geology and Geophysics, will describe "Arguments from 1848."

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

Firchow, E.S. Die deutsche sprache im amerikanischen bundesstaat Minnesota: ein forschungsbericht. In *Neue Forschungsarbeiten zur Kontaktlinguistik*, W.W. Moelleken, P.J. Weber, eds. Bonn: Dummler, 1997, pp. 148-158.

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More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ United States Information Agency NIS College and University Partnerships

The Office of Academic Programs, United States Information Agency (USIA), announces an open competition to develop a partnership with a foreign institution of higher education from the newly independent Asian states of the former Soviet Union. Participating institutions exchange faculty and administrators for a combination of teaching, lecturing, faculty and curriculum development, collaborative research, and outreach, for periods ranging from one week (for planning visits) to an academic year. The FY 1998 program will also support the establishment and maintenance of Internet and/or e-mail communication facilities as well as interactive distance learning programs at foreign partner institutions.

The partnership program is limited to the following specific academic disciplines: 1) law; 2) business, economics, trade; 3) education, continuing education, civic education, educational reform; 4) government, public policy, public administration, urban and regional economic development; and 5) journalism, communications.

The program awards up to \$300,000 for a three-year period to defray the cost of travel and per diem with an allowance for educational materials and some aspects of project administration.

The application deadline is **February 23, 1998**. For further information contact Jonathan Cebra, Office of Academic Programs, Advising, Teaching, and Specialized Programs Division, Specialized Programs Unit (E/ASU), Room 349, U.S. Information Agency, 301 4th Street SW, Washington, DC 20547; 202/619-4126, fax 202/401-1433, jcebra@usia.gov. To download a solicitation package go to <http://www.usia.gov/education/rfps>. Reference E/ASU-98-07.

■ Office of Naval Research Biomolecular Science and Technology

The Office of Naval Research will fund basic and applied research on biomolecular science and technology, with emphases on molecular and cellular marine biology and basic biomolecular science, including the principles governing molecular structure, function, and interactions.

Areas include biosensors, including developing biomolecular recognition toolboxes, molecular arrays, and cell based sensors; biomaterials and processes, including biomineralization, biocatalysis, and bioadhesives; and biotechnology.

Grants and contracts range from \$70,000 to \$150,000 a year for three years. Eligible applicants include universities, industry, and nonprofit organizations.

Proposals may be submitted **at any time**; applicants should contact program staff first. Contact Michael Marron, Biomolecular Science and Technology Program, Personnel Optimization and Biomolecular Science and Technology Department, Office of Naval Research, 703/696-4038, marronm@onr.navy.mil.

■ U.S. Army Medical Research and Materiel Command Gulf War Illness Research

The U.S. Army Medical Research and Materiel Command is inviting research proposals to examine the health consequences of serving in the Gulf War. Areas of interest are 1) investigations of the confluence of cognitive, emotional, and physical factors that produce chronic, nonspecific symptoms and physiological outcomes typical of the undiagnosed illnesses of some Gulf War veterans; 2) studies of toxicity and toxic interactions of environmental chemicals, prophylactic drugs, and military materiel; and 3) studies of the long-term health consequences associated with exposure to subclinical levels of chemical warfare agents.

About \$8 million is available for awards ranging from \$200,000 to \$1.5 million for two to four years. Eligible applicants are U.S. institutions of higher education and consortia.

The application deadline is **February 4, 1998**. For further information contact Craig Lebo, 301/619-2036, craig_lebo@ftdetrck-cmail.army.mil.

■ Air Force Office of Scientific Research Chronobiology and Neural Adaptation

The Air Force Office of Scientific Research will award grants for basic research on the circadian timing system—the biology underlying fatigue—and on the behavioral consequences of biochemical regulation of nervous system function.

Research on circadian timing includes study of individual differences and performance prediction, and brain processes involved in regulating changes from sleep to waking. Approaches include human and animal studies, biochemistry, molecular biology, electrophysiology, neurophysiology, and pharmacology. Chronobiology research focuses on biological mechanisms responsible for circadian rhythms and how these mechanisms influence behavior related to skilled human performance. Neural adaptation studies should rigorously examine the behavioral consequences of biochemical regulation of the nervous system to clarify functional relationships between brain chemistry and performance.

Grants average \$100,000 a year for three years. Eligible applicants include colleges and universities and other research organizations, and industry.

Researchers may submit proposals **at any time** but should contact program officers before sending brief preproposals. For further information contact Genevieve Haddad, AFOSR/NL, 202/767-5023, gen.haddad@afosr.af.mil. For other information on AFOSR research programs go to http://web.fie.com/fedix/afosr_.html.

■ Air Force Office of Scientific Research Bioenvironmental Sciences

The Air Force Office of Scientific Research will fund research applications in the bioenvironmental sciences, including research on the effects of toxic agents on biological systems, and mechanisms of toxicity.

Areas span predictive toxicology, including cellular and molecular mechanisms of toxicity; in vitro structure-activity relationships and their quantitative and predictive implications; biologic markers of toxicity and metabolism; and pharmacokinetic modeling of toxic Air Force chemicals.

Grants range from \$50,000 to \$300,000 a year for three years, but average about \$125,000. Eligible applicants include colleges and universities and other research organizations, and industry.

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Applications may be submitted **at any time**, but applicants should contact program officers before sending brief preproposals. For further information contact Walter Kozumbo, Chemistry and Life Sciences, AFOSR/NL, 202/767-4281, walter.kozumbo@afosr.af.mil. For other information on AFOSR research programs go to http://web.fie.com/fedix/afosr_.html.

■ Air Force Office of Scientific Research Perception and Cognition Research

The Air Force Office of Scientific Research invites applications to conduct basic theoretical and experimental research that clarifies the fundamental mechanisms underlying human performance.

Research can use behavioral methods alone or in combination with biological and computational methods to explore the higher-order aspects of information processing involved in perception and cognition to further understand how humans process information. Activities may focus on research in learning abilities, including studies that assess individual differences in psychomotor abilities as predictors of future performance; intelligent tutoring, including research on theory-based automated instruction strategies; team performance, including team-decisionmaking; and performance in demanding environments.

Grants average \$300,000 a year for three years. Eligible applicants include colleges and universities and other research organizations, and industry.

Applications may be submitted **at any time**; applicants should contact program staff before submitting proposals. For further information contact John Tangney, Air Force Office of Scientific Research, 202/767-8075, fax 202/404-7475, john.tangney@afosr.af.mil. For other information on AFOSR programs, go to http://web.fie.com/fedix/afosr_.html.

NSF Changes Two Deadlines

Since printing its December bulletin the National Science Foundation has changed two program deadlines.

Applications to the Scientific Computing Research Environments Program are now due **February 20, 1998**.

The new deadline for the Major Research Instrumentation Program is **January 30, 1998** — however, the University's internal deadline for that program was in December 1997.

■ State of Minnesota

Legislative Commission on Minnesota Resources

The Legislative Commission on Minnesota Resources invites proposals for new, innovative, or “accelerative” work to sustain and enhance Minnesota’s environmental and natural resources.

Anyone with a worthy idea is welcome to apply for LCMR funding. The commission emphasizes that formal expertise in grantmaking or lobbying is not necessary. LCMR staff will help people develop their proposals, and LCMR will conduct proposal workshops in five Minnesota cities in January.

About \$38 million is available for work in July 1999 through June 2001. Since the previous LCMR competition, the LCMR has conducted public hearings and adopted a six-year strategic plan that guides this year’s request for proposals.

The LCMR favors proposals that respond to the specific strategies described below. It also seeks projects that take sustainable approaches, meaning they are “compatible with the natural system and balance the benefits to the environment, the community, and the economy.”

Local initiatives grants program, a matching grants program for the following types of projects:

- Local and regional parks
- Regional trails
- Natural or scenic areas
- Community environmental partnerships
- The conservation partners program.

State and metro parks, recreation areas, and trails: acceleration of acquisition, development, rehabilitation, and enhancement.

Historic sites: protect, enhance, reuse, or interpret designated historic sites.

Water Quality: improve and protect water quality on a watershed basis to reduce nonpoint source pollution.

Agricultural and natural resource based industries: accelerate the use of farming, forestry, tourism, and mining practices that enhance wildlife habitat and provide protection of the environment and human health through research, implementation, or analysis of improved management techniques.

Urbanization impacts on natural resources: evaluate and analyze urbanization and sprawl impacts on natural resources and implement mitigation strategies.

Innovations in energy and transportation: advance the use of renewable and alternative energy, reduce damage from energy generation and consumption, and promote conservation and efficiency.

Decision making tools: facilitate natural resource decision-making through utilization of geographic information systems (GIS), comparative risk assessment or economic and externality analyses, evaluation of the cumulative environmental impacts of individual land use activities, and flood mitigation strategies.

Environmental education: accelerate the implementation of environmental education activities.

Benchmarks and indicators: create benchmarks, including biological indicators, for key natural resources to permit effective monitoring and assessment of environmental trends and environmental factors affecting human health.

Critical lands or habitats: restoration or enhancements that protect critical habitats.

Native species planting: expand rural and urban revegetation with native species consistent with underlying natural ecosystems.

Native fish species: research and development to enhance native fish and mollusk populations.

Exotic species: research and demonstrate ecologically sound methods to control or eradicate exotic species of plants or animals that are or may become a threat to the environment.

The LCMR’s criteria for evaluating proposals call for the following:

- Sustainable approaches that address one of the LCMR’s funding strategies,
- Clear, demonstrable results,
- Innovative approaches,
- Coordinated partnerships,
- Statewide significance,
- Matching cash support from other sources,
- Results readily useful to the public, and
- Significant additions to the public environmental and natural resource information base.

Applicants need to prepare three documents for the LCMR: The proposal, two pages maximum, summarizes the project, names the funding strategy it addresses, explains its significance, describes sources of funds for any work beyond the initial two years, and describes the project’s relation to similar work, past or present. A one-

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page resume describes the experience and qualifications of the project manager. And a one-page statement describes how the proposed work is sustainable.

Five informational proposal workshops will be held. It is not necessary to attend a workshop; they are intended to assist proposers in the development of their proposals. Proposers are asked to bring rough drafts of their proposals to the workshops. The sessions will be in Bloomington on Tuesday, January 20; Blue Earth on Wednesday, January 21; Marshall on Wednesday, January 21; Brainerd on Tuesday, January 27; and Duluth on Wednesday, January 28. See <http://www.commissions.leg.state.mn.us/lcmr/99rfp.htm> for more information, or call Yvonne Fritchie at 612/296-2406, lcmr@commissions.leg.state.mn.us. If proposers are not able to attend a workshop, they are encouraged to call LCMR staff for help.

Proposals are due **February 13, 1998**. For further information, go to the web site as listed above, or write or call LCMR, 100 Constitution Avenue, Room 65, State Office Building, St. Paul, MN 55155, 612/296-2406, fax 612/296-1321.

LCMR funds come from three sources: the Minnesota Environment and Natural Resources Trust Fund, which contains 6 percent of the state lottery sales revenue; the Minnesota Future Resources Fund, which contains part of the revenue from the state cigarette tax; and the Great Lakes Protection Account.

■ The Merrill Lynch Forum Innovation Grants Competition

The Merrill Lynch Forum will award up to \$150,000 in grants to recent Ph.D. degree recipients. The purpose is to challenge doctoral candidates to examine their dissertations in light of their commercial potential.

Doctoral students who have successfully defended their dissertations between January 1, 1996, and May 31, 1998, at an accredited university worldwide are eligible to apply. Eligible academic disciplines include the natural, physical, and social sciences, liberal arts, engineering, and mathematics. Ineligible are business, law, and journalism. Medical students are also ineligible unless they have obtained a Ph.D. concurrently in an eligible area. Five awards will be made.

Proposals must be postmarked no later than **June 1, 1998**. More information is available by writing The Innovation Grants Competition, the Merrill Lynch Forum, 225 Liberty Street, New York, NY 10080-6105, 888/333-6786. Information is also available at <http://www.ml.com/innovation>.

■ National Science Foundation Industry/University Cooperative Research Centers Program

The Industry/University Cooperative Research Centers (I/UCRC) Program was initiated in 1973 to:

1. develop long-term partnerships among industry, academe, and government;
2. consult with center members to set a research agenda focused on shared research interests and opportunities, and share the intellectual property developed by the center equally among center members;
3. have center members monitor and advise on the progress of the research, which speeds two-way transfer of knowledge between universities and industry;
4. have a formal structure and policies for center members outlined in a membership agreement;
5. rely primarily on graduate student involvement in the research projects, thus developing students who are knowledgeable in industrially relevant research;
6. have a center director, based at a university or college, who is responsible for all center activities; and
7. have a formal evaluation of the partnership conducted by an independent evaluator.

A comprehensive range of disciplines and skills are necessary to address the research issues. Therefore, multiple universities or colleges are encouraged to partner in forming a center. Each partner university or college is expected to attract industrial support to the center.

A concept paper describing the proposed center must be submitted to NSF for internal review. Potentially viable applications will be encouraged to submit a proposal for a planning grant not to exceed \$10,000. When ready for full operation under the requirements of the I/UCRC program, full proposals may be submitted for an operational center award.

There are **no specific closing dates** for concept papers, planning, or operational center proposals. For concept papers, allow up to three months for notification of the approval decision, and for proposals, allow about six months between receipt of the formal proposal and the final decision. For a complete copy of the announcement go to <http://www.nsf.gov/cgi-bin/getpub?nsf97164>. For other information contact Alex Schwarzkopf, I/UCRC Program Leader; 703/306-1383, aschwarz@nsf.gov, or go to the I/UCRC program web site at <http://www.eng.nsf.gov/eec/i-ucrc.htm>.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	305	\$ 28,662,919
Awards Processed		
November 1997	176	19,655,579
Proposals Submitted		
July 1997 - November 1997	1,552	289,198,185
Awards Processed		
July 1997 - November 1997	1,346	153,155,671
Proposals Submitted		
July 1996 - November 1996	1,523	226,219,011
Awards Processed		
July 1996 - November 1996	1,304	139,382,535

Studies of the Mouse Orphan Nuclear Receptor Tr2 Gene

Li-Na Wei, Pharmacology
Kenneth P. Roberts, Urologic Surgery

NIH, NIDA
\$166,597 - 9/30/97-8/31/98

A Randomized, Double-Blind, Placebo-Controlled Trial of CholestaGel and Lovastatin

Donald B. Hunninghake, Pharmacology
Larry W. Kotek, Medicine

Geltex Pharmaceuticals, Inc.
\$70,000 - 5/1/97-11/1/97

Analgesic Studies Using Functional Adrenergic Knock-Out Mice

George L. Wilcox, Pharmacology

Zeneca Pharmaceuticals Group
\$37,000 - 5/1/97-4/30/98

A New Family of Genes Controlling Sexual Development

David A. Zarkower, Human Genetics

Institute of Human Genetics
\$14,000 - 10/1/97-9/30/98

Efficacy of Oat Cereal on Reduction of Antihypertensive Medication

Joseph Keenan, Family Practice and Community Health
Zhiquan Huang, Family Practice and Community Health
Joel J. Pins, Family Practice and Community Health

Quaker Oats Co.
\$197,490 - 2/1/97-8/31/97

Man-to-Man: Sexual Health Seminars

B. R. S. Rosser, Family Practice and Community Health

St. of Minn., Department of Health
\$73,997 - 7/1/97-12/31/98

Epidemiology of Otitis Media in Native American Children

Kathleen A. Daly, Otolaryngology
Lisa L. Hunter, Otolaryngology
G. Scott Giebink, Pediatrics
Phyllis Pirie, Epidemiology

NIH, NIDCD
\$2,220,444 - 9/1/97-8/31/02

Mechanisms for Peripheral Induction of T Cell Tolerance

Matthew F. Mescher, Laboratory Medicine and Pathology

NIH, NIAID
\$537,107 - 9/15/97-8/31/98

Economic Models of the Biological Database Infrastructure

Lynda B. Ellis, Laboratory Medicine and Pathology

National Science Foundation
\$59,798 - 1/1/98-12/31/98

Interaction of Ovarian Carcinoma Cells with Mesothelial Cells

Amy Skubitz, Laboratory Medicine and Pathology

Minnesota Medical Foundation
\$9,000 - 11/1/97-10/31/98

Genetic Control of UV-Light Induced Pigmentation

Richard A. King, Medicine
William S. Oetting, Medicine

Beiersdorf Ag
\$249,960 - 6/1/97-5/31/00

The Guardian Trial: Double-Blind Placebo-Controlled, Multinational Trial

David Laxson, Medicine

Quintiles, Inc.
\$66,240 - 1/1/97-8/15/98

Immunotherapy with Subcutaneous IL-2, GM-CSF, and Activated NK Cell Invasion

Jeffrey Miller, Medicine

Immunex Corp.
\$60,000 - 4/29/97-2/28/99

Mechanism of Induction of Eibroblast Apoptosis by Anti-CD44 Antibody

Craig A. Henke, Medicine
Bin Tian, Medicine
Peter B. Bitterman, Medicine

Minnesota Medical Foundation
\$20,000 - 11/1/97-10/31/98

Cerebellar Transplants Into SCA1 Transgenic Mice

Walter Low, Neurosurgery
William F. Kaemmerer, Neurosurgery

NIH, NIMH
\$18,745 - 11/1/97-10/31/98

Children with Special Health Care Needs and Their Families

Theora Dodd-Evans, Pediatrics
Ann Garwick, Pediatrics

HRSA, Maternal and Child Health
\$24,987 - 10/1/97-9/30/98

Neurophysiologic Assessment of the At-Risk Newborn

Michael Georgieff, Pediatrics
Charles A. Nelson, Child Development
Raye-Ann De Regneir, Pediatrics

Minnesota Medical Foundation
\$9,000 - 12/1/97-11/30/98

Magnetic Resonance Imaging of Heart Function and Anatomy

Norbert Wilke, Radiology
Michael Jerosch-Herold, Radiology

Medtronic, Inc.
\$65,513 - 4/23/97-1/23/98

Radiosensitivity Potential for Somatogen HBOCs

Chang W. Song, Therapeutic Radiology

Somatogen, Inc.
\$9,108 - 3/14/97-3/13/98

Regulation of E-Selectin During Acute Inflammation

Kevin Billups, Urologic Surgery

NIH, NIDDK
\$49,342 - 9/16/97-12/31/97

Institute for Leadership in Adolescent Health
Robert W. Blum, Public Health
HRSA, Maternal and Child Health
\$29,739 - 10/1/97-9/30/98

Tibolone Treatment Study
Kristine Ensrud, Medicine
Organon Pharmaceuticals, Inc.
\$929,880 - 9/1/97-6/30/98

Assessment and Speciation of Aerosol Exposures of Nickel Industry Workers
James H. Vincent, Environmental and Occupational Health
G. Ramachandran, Environmental and Occupational Health
Inco Limited, Ontario Division, Canada
\$170,174 - 4/1/97-9/30/99

Etiology and Consequences of Injuries Among Farm Children
Susan G. Gerberich, Environmental and Occupational Health
Robert W. Gibson, Medicine, Duluth
Centers for Disease Control
\$150,000 - 9/30/97-9/29/98

Biomagnification of Toxaphene in the Lake Michigan Lower Foodweb
Deborah L. Swackhamer, Environmental and Occupational Health
Environmental Protection Agency
\$70,049 - 10/1/97-9/30/99

Demonstration to Motivate Small Businesses to Adopt Hazard Control Technology
Lisa M. Brosseau, Environmental and Occupational Health
Centers for Disease Control
\$54,988 - 9/30/97-9/29/98

Research Data Assistance Center - Technical Assistance
A. M. McBean, Health Services Research
Health Care Financing Administration
\$263,116 - 6/24/97-12/31/97

Using State Medicaid Files for Diabetes Surveillance
A. M. McBean, Health Services Research
Association of Schools of Public Health
\$123,701 - 10/1/97-9/30/98

Microleakage Testing of Artglass Anterior Crowns
Jacob K. Lee, Preventive Sciences
Glastech Corp.
\$2,280 - 10/27/97-12/31/99

Genetic Variation in Vaccine and Field Porcine Reproductive Respiratory Syndrome Virus Strains
Michael P. Murtaugh, Veterinary Pathobiology
Kay S. Faaberg, Veterinary Pathobiology
Boehringer Ingelheim Limited
\$72,540 - 10/1/97-9/30/98

Complete Genome Sequence of VR-2332 and Porcine Reproductive Respiratory Syndrome Virus
Kay S. Faaberg, Veterinary Pathobiology
Boehringer Ingelheim Limited
\$46,662 - 6/1/97-11/30/97

Doctoral Dissertation Research: William Whewell's and Sir Francis Beaufort's Study of the Tides and Organization of Science
Sally Gregory Kohlstedt, History of Science and Technology
Michael Reidy, History of Science and Technology
National Science Foundation
\$12,000 - 8/1/97-7/31/98

Dynamical Evolution of Young Supernova Remnants
Barron Koralesky, Astronomy
Lawrence Rudnick, Astronomy
National Aeronautics and Space Administration
\$22,000 - 9/15/97-9/14/98

Fellowship Application
C. D. Frisbie, Chemical Engineering and Materials Science
David and Lucile Packard Foundation
\$500,000 - 9/16/97-9/15/98

Reductive Cleavage Method for Glycan Structural Analysis
Gary R. Gray, Chemistry
NIH, NIGMS
\$208,086 - 9/1/97-8/31/98

Signal Transduction Probed by Consolidated Ligands
George Barany, Chemistry
Rockefeller University
\$44,100 - 1/1/97-12/31/97

Mechanistic Modelling of Self-Formed Channel Meanders on Submarine Fans
Gary N. Parker, Civil Engineering
National Science Foundation
\$130,000 - 11/15/97-10/31/99

Combining Data Mining and Information Visualization Techniques with a Molecular Biology Sequence Similarity Database System
Elizabeth Shoop, Computer Science and Engineering
National Science Foundation
\$70,573 - 1/1/98-12/31/99

Large Directory Engine - X500 Large Directory Server
Ding Z. Du, Computer Science and Engineering
Control Data Corp.
\$27,315 - 9/16/97-9/15/98

Geologic Map of the Mesabi Iron Range, Northern Minnesota
Glenn B. Morey, Minnesota Geological Survey
Iron Range Resources Rehabilitation Board
\$8,000 - 4/7/97-12/31/98

Research in Support of Wellhead Protection
David L. Southwick, Geology and Geophysics
Southeast Minnesota Water Resources Board
\$8,108 - 9/1/97-8/31/98

Problems in Nonlinear Dynamics
Rachel A. Kuske, Mathematics
National Science Foundation
\$61,304 - 8/31/97-6/30/00

Cryosurgery of Uterine Fibroids - Career Award
John C. Bischof, Mechanical Engineering
National Science Foundation
\$55,125 - 9/15/97-8/31/98

Parental Investment and Sexual Selection in African Lions
Craig Packer, Ecology, Evolution, and Behavior
National Science Foundation
\$75,000 - 9/1/97-8/31/98

Testing National Pork Producer's Council Production and Financial Measures
Richard O. Hawkins, Applied Economics
Dale W. Nordquist, Applied Economics
Kevin Klair, Applied Economics
National Pork Producers Council
\$35,000 - 6/13/97-11/30/97

Minnesota County-Level Database
Carole Yoho, Applied Economics
Thomas Stinson, Applied Economics
St. of Minn., Department of Finance
\$10,000 - 4/1/97-6/30/97

Comparison and Quantitative Trait Lock (QTL) Region-Specific, Genetic, and Physical Map for Bovine
Abel Ponce De Leon, Animal Science
U.S. Department of Agriculture
\$219,669 - 7/1/97-10/31/99

Canine Infectivity of Ixodes Ticks Infected with Borrelia

Ulrike G. Munderloh, Entomology
 Timothy J. Kurtti, Entomology

Fort Dodge Laboratories
 \$29,907 - 10/1/97-9/30/98

Control of Cocoa Swollen Shoot Disease in Ghana

Benham E. Lockhart, Plant Pathology
 Neil E. Olszewski, Plant Biology

American Cocoa Research Institute
 \$25,000 - 4/1/97-3/31/98

Forest Ecosystem Stewardship Publication

Barbara Coffin, College of Natural Resources

U.S. Department of Agriculture
 \$5,000 - 9/30/97-9/30/98

Factors Influencing the Control of Eurasian Watermilfoil

Raymond M. Newman, Fisheries and Wildlife
 David W. Ragsdale, Entomology
 David D. Biesboer, Plant Biology

St. of Minn., Department of Natural Resources
 \$150,000 - 7/1/97-6/30/99

Developmental Disabilities Project of National Significance

K. Charlie Lakin, Educational Psychology

Department of Health and Human Services
 \$50,000 - 9/30/97-9/29/98

Heritage Study—Genetics Response to Exercise and Risk Factors

Arthur S. Leon, Public Health
 Robert C. Serfass, Kinesiology and Leisure Studies
 Ava J. Walker, Kinesiology and Leisure Studies

NIH, NHLBI
 \$86,174 - 9/30/97-8/31/98

Telecommunications Networks, Informative Technology, and Transportation Research Initiative

Lee Munnich, Humphrey Institute

St. of Minn., Department of Transportation
 \$100,036 - 9/15/97-12/31/98

Assessing and Communicating Risk: A Partnership to Evaluate a Superfund Site on Leach Lake Tribal Lands

Michael E. McDonald, Natural Resources Research Institute, Duluth
 Richard Axler, Natural Resources Research Institute, Duluth
 Carl Richards, Natural Resources Research Institute, Duluth

Environmental Protection Agency
 \$249,781 - 9/15/97-9/14/99

Nonindigenous Species Research and Outreach

Michael E. McDonald, Natural Resources Research Institute, Duluth
 National Oceanic and Atmospheric Administration
 \$188,722 - 9/1/97-8/31/99

Questions About Environment and Organizational Awareness

Rossana Armonson, Urban and Regional Affairs

St. of Minn., Pollution Control Agency
 \$3,600 - 10/8/97-1/6/98

Development of a Fluorescence Based Sensor for Determination of Optical Brighteners

Christopher Owen, Natural Resources Research Institute, Duluth
 Richard Axler, Natural Resources Research Institute, Duluth
 Eugene I. Tokhtuev, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$66,765 - 7/1/97-6/30/99

Alternative On-Site Treatment Systems: Assessment of Recirculation Systems

Barbara J. McCarthy, Natural Resources Research Institute, Duluth
 Richard Axler, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$64,580 - 7/1/97-6/30/99

Interactive Computing and Geographical Positioning System (GIS) Data Base Development for Mine Planning and Permitting

Lawrence M. Zanko, Natural Resources Research Institute, Duluth
 Minnesota Technology, Inc.
 \$53,500 - 7/1/97-6/30/99

Ready-to-Use Horticultural Peat Granules

Timothy S. Hagen, Natural Resources Research Institute, Duluth
 Thomas Malterer, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$42,937 - 7/1/97-6/30/99

USX-Minntac: Mineralogical and Chemical Characterization of the Biwabik Iron Formation in the Virginia Horn Area

Harlen B. Niles, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$33,500 - 7/1/97-6/30/99

Forest Productivity and Assessment of Opportunities for the Future

William Berguson, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$32,267 - 7/1/97-6/30/99

Husky Rustic Siding: Second Stage Process Improvement and Product Development

Brian K. Brashaw, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$27,000 - 7/1/97-6/30/99

Membrane Press Technology

Brian K. Brashaw, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$22,750 - 7/1/97-6/30/99

Plant Start-Up Assistance for Phenix Biocomposites

Bill Callas, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$21,000 - 7/1/97-6/30/99

Technical Assistance to the Minnesota Peat Association

Thomas Malterer, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$11,166 - 7/1/97-6/30/99

Prediction of Health and Environmental Hazards of Chemicals

Subhash C. Basak, Center for Water and Environment, Duluth
 Douglas M. Hawkins, Statistics
 Keith B. Lodge, Center for Water and Environment, Duluth

USDOD, Air Force
 \$174,456 - 10/1/97-9/30/98

Computer-Assisted Design of Environmentally Benign Photoactive Chemicals

Subhash C. Basak, Center for Water and Environment, Duluth

Minnesota Technology, Inc.
 \$59,953 - 7/1/97-6/30/99

Idea Evaluation or Seed Research Money

Michael Lalich, Natural Resources Research Institute, Duluth

Minnesota Technology, Inc.
 \$255,107 - 7/1/97-6/30/99

Northeast Minnesota Skills Assessment

Richard W. Lichty, Economics, Duluth

Mesabie Range Community and Technical College
 \$90,387 - 8/1/97-7/31/98

Application for Grants Under the Student Support Service

Robert B. Nelson, Student Affairs, Crookston
 Rita S. Meyer, Chancellor's Office, Crookston

U.S. Department of Education
 \$180,000 - 9/1/97-8/31/98

Fax number	612/624-4843		
ORTTA's Web site	http://www.ortta.umn.edu		
	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration - Information		624-5599	spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@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, Minn. 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
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
DHHS (NIH, etc.)	Karen Sachi	626-0270	karen@ortta.umn.edu
Voluntary health/Am. Cancer/Am. Heart/foundations	Gary Gillet	626-8267	gary@ortta.umn.edu
DHHS (NIH, etc.), voluntary health	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
USDI (IT), St. of Minn., DOT, VA, associations/societies	Todd Morrison	624-5066	todd@ortta.umn.edu
USDA, ag. associations	Kate Tennesen	626-7718	kate@ortta.umn.edu
.....	Liz Li	624-0810	liz-l@ortta.umn.edu
USDI (Non-IT), St. of Minn, DOC contracts, NIST	Amy Levine	626-7441	amy-l@ortta.umn.edu
DOD, DOE, NASA, NRC	Virginia Olson	624-0288	ginny@ortta.umn.edu
Minn. Technology Inc., business/industry/3M (all non-HS)	TBA	624-5571	@ortta.umn.edu
Minn./cities/counties/foreign/colleges/univ's, AID/USIA/MUCIA	Susan Stensland	625-3515	stensland@ortta.umn.edu
.....	TBA	624-2521	@ortta.umn.edu
Sea Grant, ACS/PRF, misc. fed.	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
NSF (IT)	TBA	625-1359	andy@ortta.umn.edu
NSF (non-IT), MnDOT	Tracy McClun	626-8265	tracy@ortta.umn.edu
Patents and Technology Marketing (information/fax)		624-0550 / 624-6554	ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Grace Malilay	624-6426	grace@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	@ortta.umn.edu
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@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
Grants & contracts administrative assistant	Janice Varner	218/726-6593	jvarner@ub.d.umn.edu
Senior secretary	Mary Jo Aubin/Mary Kay Swanson	218/726-7582	maubin@ub.d.umn.edu
Morris, Grants Development http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
Support staff	Rita Bolluyt	320/589-6465	bolluytr@caa.mrs.umn.edu
	related numbers		
Sponsored Financial Reporting		fax 626-0321	
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of Minn.	TBA	624-5007	@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Bob Glunz	624-8053	bob-g@ortta.umn.edu
Supervisor, NIH, US Ed.	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Renee Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs		626-5654, fax 626-6061	
Director	Moir Keane	626-5654	moira@ortta.umn.edu

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RESEARCH REVIEW

Office of Research and Technology Transfer

February 1998

The University Received 14 Patents Last Quarter

Among the patents the University acquired in October through December 1997 are a cancer treatment, a method of processing poultry while avoiding bacterial contamination, and a portable device to help drillers test the strength of rock samples.

The University's Patents and Technology Marketing office posts quarterly news of its work at <http://www.ortta.umn.edu/patents.htm>. That news, going back to April 1996, includes both new patents and technology transfer agreements, such as agreements allowing a manufacturer to use a University-invented tool for making semiconductors, or allowing researchers at another university to work with an enzyme purified here. In the last quarter of 1997, 21 such agreements were completed.

Below is a list describing last quarter's patents.

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1. **Title:** **High-Efficiency Microbubble Aeration**
Purpose: For transferring a gas into a liquid
Inventors: Charles J. Gantzer, non-University
Michael J. Bonnette, non-University
Michael J. Semmens, Civil Engineering
2. **Title:** **Method to Enhance Thrombomodulin APC Generation Using Cationic Proteins**
Purpose: To inhibit blood coagulation
Inventor: Arne Slungaard, Medicine
3. **Title:** **High-Capacity High-Rate Materials**
Purpose: Materials for electrochemical applications and devices, such as batteries
Inventors: William H. Smyrl, Chemical Engineering & Materials Science
Stefano Passerini, Chemical Engineering & Materials Science
Dinh Ba Le, Chemical Engineering & Materials Science
Boone B. Owens, Chemical Engineering & Materials Science
4. **Title:** **Synthesis of Acetogenins**
Purpose: For producing an anti-tumor material
Inventors: Thomas R. Hoye, Chemistry
Zhixiong Ye, Chemistry

{ continued on page 8 }

Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 8

February 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr	+ 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr	+ 8.4%
Summer quarter TA, RA, AF	—	8.4%
Summer session TA, with tuition	\$12.68/hr	+ 8.4%
Summer session TA, without tuition	—	8.4%
Professional program assistant	—	8.4%
Legal project assistant, with tuition	\$11.11/hr	—
Legal project assistant, without tuition	—	—
Dental fellow *	\$3.88/hr	—
Medical fellow *	\$3.19/hr	—

To the rates listed above, add 7.7% when a student-employee's appointment is for more than 50% time, or when the student works more than 20 hours per week, or when the student is enrolled for fewer than 6 credits in a quarter (1 credit for Ph.D. candidates). This charge is for Social Security at 6.2% and Medicare at 1.5%.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

The DUNS Number for Applications is 55 591 7996

The federal government is particular about precisely which DUNS number the University shall use on grant applications. It is 55 591 7996. Our Dunn and Bradstreet number—a.k.a. "DUNS number"—is often requested on grant application face pages. The University has more than 100 such numbers for various locations. On grant applications, be sure to use the DUNS number for the Sponsored Projects Administration—55 591 7996.

Research Subjects' Protection Programs Obligation to Report Incidents, Suspension of Approval, and Findings of Noncompliance

The Institutional Review Board: Human Subjects Committee (IRB) and the Institutional Animal Care and Use Committee (IACUC) are obliged by federal regulations and University policy to report unexpected incidents, suspension of approval, and findings of noncompliance to institutional officials and to federal regulatory authorities.

The IRB must report these matters to the vice president for research (the institutional official for human subjects protection), who, on the recommendation of the IRB, will report them to the federal Office for Protection from Research Risks (OPRR), and in cases where drugs, biologics, or devices are involved, also report to the Food and Drug Administration (FDA).

The IACUC must report these matters to the institutional official for animal care and use (currently a senior ranking official in the Academic Health Center), who then makes a report to the Office for Protection from Research Risks (OPRR) and to the United States Department of Agriculture (USDA).

The University and its committees take these responsibilities very seriously and are careful to report in the spirit of full disclosure to regulators. While reporting is not commonplace, the regulatory entities to whom we report appreciate knowing that the University is able to recognize problems and intervene with corrective action in cases where problems have developed.

In reviewing the matter with regulatory officials, we have been told that reports do not necessarily prompt audits or site visits. Reporting in fact is perceived by the authorities as institutionally responsible behavior. It is most gratifying to have an incident reported where an institution can demonstrate that effective change has occurred as a result of findings. Many of the strengths in our current program have their roots in troubleshooting and intervention when problems have arisen.

It is important to note that the extent of IRB and IACUC involvement in review and reporting of incidents is limited to the protection of human and animal subjects in our research and service programs. Academic misconduct relating to other aspects of research are not the purview of the IRB or IACUC but are managed by other University entities.

Research Animal Resources Animal Per Diem Rates

Effective 7/1/98

Species	\$/day
Calves	8.27
Cats	3.07
Chickens and Ducks	.90
Chicks (up to 14 days)	.24
Chicks (15-45 days)	.46
Chinchillas	.63
Dogs	4.21
Dogs and Cats with litter	5.50
Ferrets	3.00
Guinea Pigs	.58
Lizards and Newts	.27
Non-Human Primates (baboons)	5.48
Non-Human Primates (macaques)	3.35
Rodents (small/large box charge)	
Conventional	.35 / .79
SPF	.40 / .89
Autoclaved	1.48 / 1.84
Pigeons	.76
Pigs	5.01
Rabbits	1.27
Rana Frogs	.35
Rats (suspended metal cages)	.29
Sheep and Goats	5.55
Turtles	.71
Xenopus Frogs	
Small tank	.47
Large tank	.94
Post-operative care	18.76

If you have any questions about IRB or IACUC policies, or wish to make a suggestion about topics to be covered in this newsletter, please call Moira Keane at 612/626-5654 or send e-mail to irb@umn.edu or iacuc@umn.edu Visit our web site at <http://www.research.umn.edu/subjects.htm>

by Moira Keane, director
Research Subjects' Protection Programs

Bureau of Health Professions Bureau of Health Professions Distributes Information via Web Only

Though SPA serves as the University's "single point of contact" with the Bureau of Health Professions, responsibility for reviewing BHP's web site for vital information rests with investigators and their designees.

For BHP's Competitive Grant & Cooperative Agreement Schedule and the Summary Progress Report Schedule, which include deadlines, program descriptions, and other information regarding new proposals and continuations, see <http://www.hrsa.dhhs.gov/bhpr>.

BHP directs all inquiries regarding its programs, applications, and guidelines to its web site. Most of the BHP documents are in portable document format. To read them, you need Adobe Acrobat Reader software on your machine, which is available free of charge from <http://www.adobe.com>.

IRB and IACUC Have New E-mail Addresses

The University's Institutional Review Board: Human Subjects Committee (IRB) and Institutional Animal Care and Use Committee (IACUC) both have new e-mail addresses: irb@umn.edu and iacuc@umn.edu.

Information from IRB and IACUC is also available at the web site of their parent organization, Research Subjects' Protection Programs: <http://www.research.umn.edu/subjects.htm>.

Sponsored Projects Administration SPA Staff Reorganization

Question: How do I find out who the grant administrator is for an award in our department, or who do I contact for information about a particular sponsor?

Answer: Sponsored Projects Administration (SPA) in the Office of Research and Technology Transfer has recently reorganized. New staff have been added and areas of responsibility changed. All senior grant administrators are now partnered with a grant administrative assistant who shares responsibility for sponsors, or caseloads, to create better coverage. SPA's two units are organized as follows: One unit, supervised by Todd Morrison, has responsibility for nonfederal sponsors (excluding foundations) and the National Science Foundation (NSF). The other unit, supervised by Mary Lou Weiss, includes responsibility for all federal sponsors (excluding NSF), and foundations. Detailed responsibilities are listed on the following page. You may also find detailed information on the ORTTA home page <http://www.ortta.umn.edu>; click on "ORTTA Directory."

The best source for identifying the grant administrator on an existing award is in CUFS on the GSUM (Grants Summary) table. To access the grant record you need to know the fund, area, and org numbers, and use the current University fiscal year, e.g., '98'. Any change in grant administrator assignment is updated here first.

Nonfederal Sponsors, National Science Foundation, Veterans' Administration

Todd Morrison, Assistant Director 624-5066
 Minn. Technology, Inc.
 Minn. Department of Health
 NSF major programs
 VA

Launa Shun, Grant Administrative Asst. 624-2521
 National Science Foundation

Sandy Kenyon, Grant Administrative Asst. 624-5967
 National Science Foundation

Kate Tennesen, Sr. Grant Administrator 626-7718
 Agricultural Associations
 Other private associations/organizations

Liz Li, Grant Administrative Asst. 624-0810
 Voluntary health associations

Amy Levine, Sr. Grant Administrator 626-7441

Tracy McClun, Grant Admin. Asst. 626-8265
 State of Minnesota
 Governments (cities, counties, states)

Judy Volinkaty, Sr. Grant Administrator 624-3317

Lynn VanOverbeke, Grant Admin. Asst. 624-0035
 Business and industry, Medical School

Gary Gillet, Sr. Grant Administrator 624-5571
 TBA
 Business and industry, health sciences
 outside of Medical School
 Other colleges and schools

Federal Sponsors, excluding NSF, and Foundations

Mary Lou Weiss, Assistant Director 624-5856
 NIH, HRSA, FDA, CDC, DHHS, USDE

Judy Krzyzek, Sr. Grant Administrator 624-2546
 Foundations
 USDE
 NIH, HRSA, FDA, CDC, DHHS

Leslie Flaherty, Grant Admin. Asst. 626-8267
 Foundations
 NIH, HRSA, FDA, CDC, DHHS (grants only)

Virginia Olson, Sr. Grant Administrator 624-0288
 NASA
 DOD (Air Force, Army, all DOD contracts)
 USDA (contracts only)
 DOC (contracts only)
 EPA (contracts only)
 NEH/NEA (contracts only)
 DOE (contracts only)
 Federal laboratories
 USDI (contracts only)
 DOT (contracts only)
 NIH, HRSA, FDA, CDC, DHHS

David Welter, Grant Administrative Asst. 625-1359
 DOD (Navy, grants only)
 USDA (grants only)
 DOC (grants only)
 EPA (grants only)
 NEH/NEA (grants only)
 DOE (grants only)
 USDI (grants only)
 DOT (grants only)
 NIH, HRSA, FDA, CDC, DHHS (grants only)

Kevin McKoskey, Sr. Grant Administrator 624-1521
 USDA (contracts only)
 USIA
 AID
 DOJ (contracts only)
 HUD (contracts only)
 USDE
 NIH, HRSA, FDA, CDC, DHHS

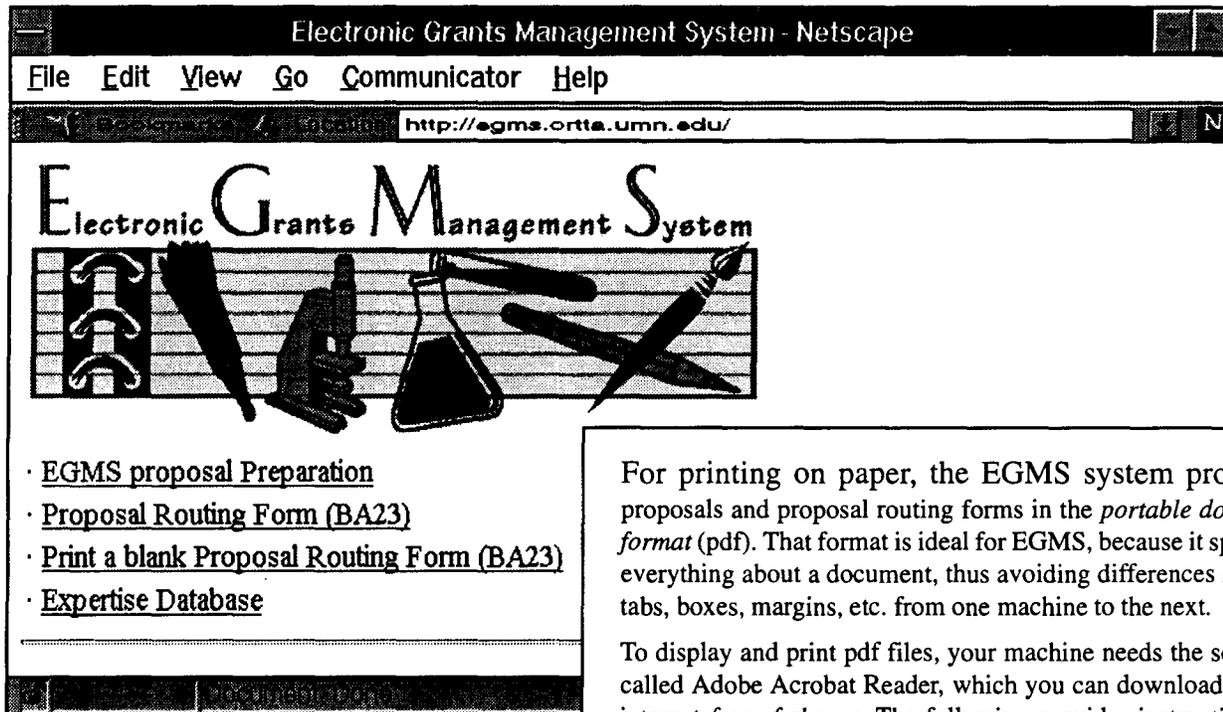
Karen Sachi, Grant Administrative Asst. 626-0270
 USDA (grants only)
 DOJ (grants only)
 HUD (grants only)
 NIH, HRSA, FDA, CDC, DHHS (grants only)

Lorrie Awoyinka, Sr. Grant Administrator 625-3415
 USDE
 USDA (contracts only)
 NIH, HRSA, FDA, CDC, DHHS

Doug Johnson, Grant Admin. Asst. 624-4121
 USDA (grants only)
 NIH, HRSA, FDA, CDC, DHHS (grants only)

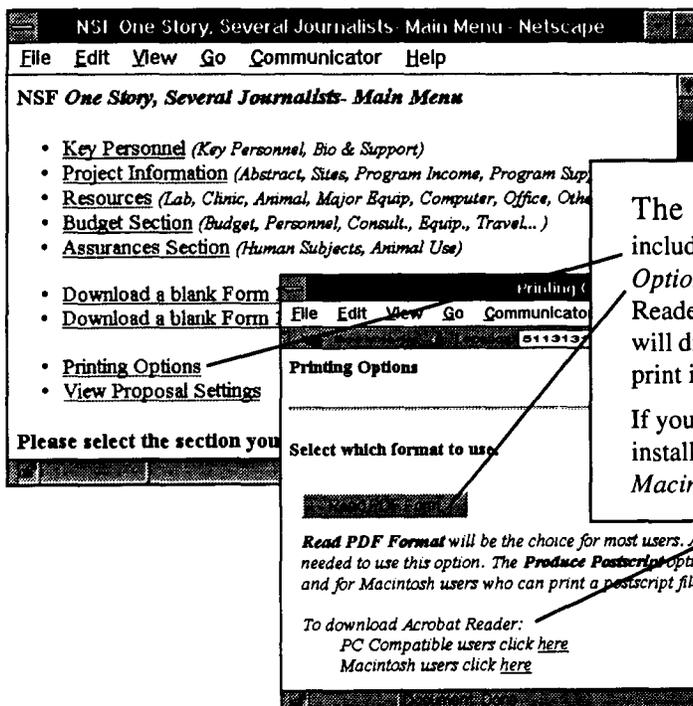
How to Print EGMS Documents on Paper

EGMS produces proposals and proposal routing forms in pdf format. Printing them onto paper requires Adobe Acrobat software.



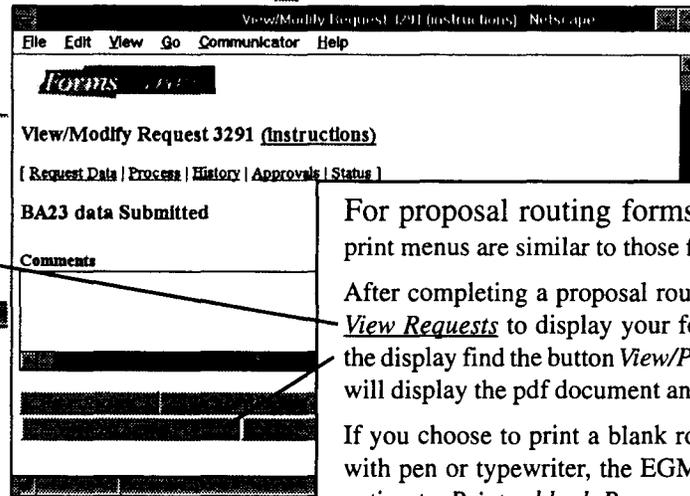
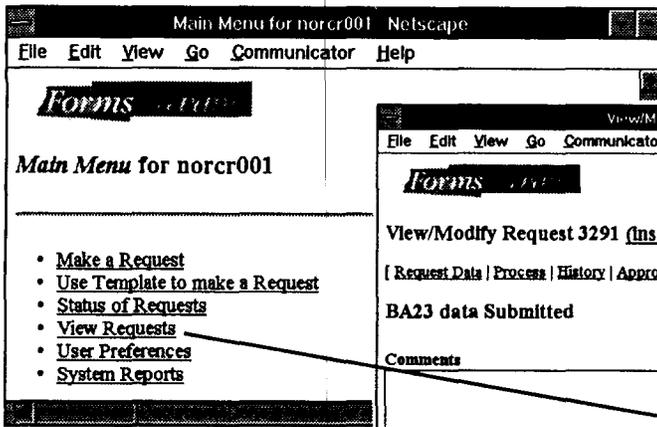
For printing on paper, the EGMS system produces proposals and proposal routing forms in the *portable document format* (pdf). That format is ideal for EGMS, because it specifies everything about a document, thus avoiding differences in type, tabs, boxes, margins, etc. from one machine to the next.

To display and print pdf files, your machine needs the software called Adobe Acrobat Reader, which you can download via the internet *free of charge*. The following provides instructions for downloading, installing, and using the Acrobat Reader.



The main menu for EGMS proposal preparation includes the choice *Printing Options*, and the subsequent *Printing Options* menu offers the choice *Read PDF Form*. If Acrobat Reader is installed on your machine, pressing the *Read* button will display the proposal as a pdf file on-screen and allow you to print it on paper.

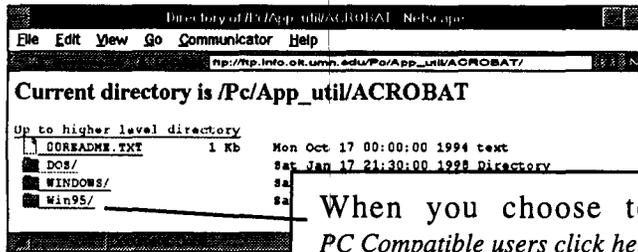
If your machine does not yet have the Acrobat Reader, begin its installation by clicking on *PC Compatible users click here* or *Macintosh users click here*, depending on your machine.



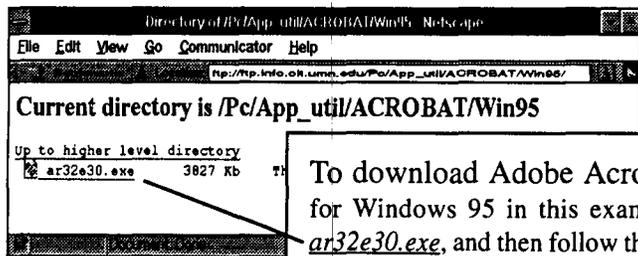
For proposal routing forms (a.k.a. BA23s), the print menus are similar to those for proposals:

After completing a proposal routing form on-line, touch View Requests to display your form. Near the bottom of the display find the button *View/Print Acrobat PDF*, which will display the pdf document and allow you to print it.

If you choose to print a blank routing form and fill it in with pen or typewriter, the EGMS home page offers the option to Print a blank Proposal Routing Form (BA23). That option leads to a menu (not illustrated here) that offers *Read PDF Form* and the two *PC and Macintosh users click here* options.



When you choose to download the Reader, via *PC Compatible users click here* for example, the next menu asks you to select a variety of Acrobat Reader suited to your system: DOS/, WINDOWS/ for Windows 3.1 or 3.11, or Win95/ for Windows 95 or Windows NT 4.0.



To download Adobe Acrobat Reader, for Windows 95 in this example, click on ar32e30.exe, and then follow the instructions. There are a few points that you should be aware of:

- This is a “self-extracting” file, which means that after you download it, go to the directory where you saved it, click on it, and it will install itself.
- The file is large, almost 4 megabytes, so after you install it you will probably want to delete it from your hard drive. This does not remove the installed files.
- Remember which directory you download the .exe file to. In Windows 95 it is often easiest to put it into the “My Documents” folder.
- In order for your web browser—Netscape or Explorer, for example—to find and use the Acrobat Reader to display and print pdf files, you may need to tell the browser where the Reader is stored. Look in the browser for menu items similar to *Edit*, *Preferences*, *Applications*, then install the new Reader application by imitating the installations that are already there. The file that makes the Reader run will be named something similar to *acord16.exe*.

note:
these images show
parts of web screens.

If you need help, call the UM Computer Help Line at 612/626-4276.

5. **Title:** **Method for Diagnosis of Mystery Swine Disease**
Purpose: For diagnosing the disease from serum or tissue biopsy
Inventors: David A. Benfield, non-University
 James E. Collins, Veterinary Diagnostic Medicine

6. **Title:** **Monoclonal Antibodies to the Mystery Swine Disease Virus**
 [Assignee: South Dakota State University]
Purpose: For diagnosing the disease from serum or tissue biopsy
Inventor: David A. Benfield, non-University

7. **Title:** **Biotherapy of Cancer by Targeting Tp-3/P80**
Purpose: For research on targeted chemotherapy for cancer
Inventors: Fatih M. Uckun, Therapeutic Radiology-Radiation Oncology
 Peter M. Anderson, Pediatrics

8. **Title:** **Low-Pathogenicity PRRS Live-Virus Vaccines and Methods of Preparation Thereof**
Purpose: A vaccine against respiratory and reproductive disease in swine
Inventor: Han Soo Joo, Clinical & Population Sciences

9. **Title:** **Method and Apparatus for Separating a Thin Film from a Substrate**
Purpose: Testing device for evaluating thin-film coatings
Inventors: John C. Nelson, Chemical Engineering & Materials Science
 William W. Gerberich, Chemical Engineering & Materials Science
 He Huang, Chemical Engineering & Materials Science
 Maarten P. De Boer, Chemical Engineering & Materials Science
 Feng Wang, Chemical Engineering & Materials Science

10. **Title:** **Method of Processing Poultry**
Purpose: A means to evaluating the health of a carcass without cutting bones or internal organs, thus avoiding a major source of bacterial contamination
Inventors: David A. Halvorson, Veterinary Pathobiology
 Scott R. Holicky, Biosystems & Agricultural Engineering
 Sally L. Noll, Animal Science
 Jonathan Chaplin, Biosystems & Agricultural Engineering

11. **Title:** **Laminin A Chain Polypeptides from the Amino Terminal Globular Domain**
Purpose: To increase cell adhesion and cell spreading capacity on medical implants and cell cultures
Inventors: Amy P. N. Skubitz, Laboratory Medicine & Pathology
 Leo T. Furcht, Laboratory Medicine & Pathology

12. **Title:** **Buoy with Solar Cells**
Purpose: Part of a remote-control system for collecting data from bodies of water, chiefly lakes
Inventor: Alan W. Cibuzar, non-University

13. **Title:** **Portable Rock Strength Evaluation Device**
Purpose: Device for measuring strength of rock samples at much less expense than with traditional methods, chiefly for use in mining and drilling
Inventors: Emmanuel Detournay, Civil Engineering
 Andrew Drescher, Civil Engineering
 Dave Hultman, Aerospace Engineering and Mechanics

14. **Title:** **Immortalized Cell Lines for Virus Growth**
Purpose: For propogating viruses and expressing recombinant proteins
Inventors: Douglas N. Foster, Animal Science
 Linda K. Foster, Animal Science

Testing Cell Lines for Rodent Viruses

A variety of infectious agents in rodents can affect animal health and alter research results. Thus they are excluded from specific pathogen free (SPF) rodent colonies. Some of these agents, such as *Mycoplasma* species and various viruses, can be cell-culture or tumor-cell contaminants. Therefore it is essential that any biologic products that are to be injected into SPF mice or rats are free of infectious agents. Unless cell lines are purchased from a commercial source that guarantees its products are free of contaminants, and subsequently handled in an aseptic manner, contamination may be present.

Cell lines may be tested for contamination using the mouse antibody production (MAP) test. A clarified cell lysate is injected into immunocompetent mice, and serum is tested for antibodies to the infectious agents of concern. This service is provided by companies, such as Charles River Laboratories, for a cost of about \$425 per cell line. Research Animal Resources offers the same service for a cost of approximately \$300 per cell line. This fee includes the purchase and maintenance cost of the mice, veterinary technician time and supplies, and the cost of serologic testing. The investigator only needs to supply the cells. Results should be available after 45 days.

For further information on this service contact RAR at 612/624-9100, or Brenda Koniar at 612/625-0923. Cell line submission forms are available from RAR, or on the RAR website at <http://www.ahc.umn.edu/rar/MAPIsub.html>.

RAR Offers Public Education about Animal Research

Research Animal Resources plays an active role in education of the public on the humane care and use of animals in biomedical research. They can provide speakers and an information packet for anyone with an interest in the subject, including students in primary and secondary schools. The RAR web site at <http://www.ahc.umn.edu/rar/> is also an excellent resource for students and the general public. If you, your department or organization, or a student you know are interested in a packet or in scheduling a speaker, please contact RAR at 612/624-9100.

In Vitro vs. In Vivo Production of Monoclonal Antibodies

It is the policy of the National Institutes of Health (NIH) and the University of Minnesota that any procedures that may cause more than momentary or slight pain or distress to an animal be justified on the basis of scientific necessity. Alternatives to live animal use must be considered and the need for live animals justified. This justification is reviewed by the Institutional Animal Care and Use Committee (IACUC) on all applications for animal use.

The mouse ascites method of monoclonal antibody production has the potential for causing pain or distress to animals. The hybridomas that are injected will lead to death of the animal if it is not euthanized in a timely manner. Ascites can be painful and may cause respiratory distress if allowed to accumulate. Harvesting the antibody-laden fluid may also cause problems to an animal if not performed properly. Mouse monoclonal antibody production has garnered international attention recently, as alternatives to the use of live animals have become available. A complete discussion of this issue is present on the USDA Animal Welfare Information Center's web site at <http://www.nal.usda.gov/awic/pubs/antibody/>. This information is also available from Research Animal Resources (RAR) by calling 612/624-9100.

The Office for Protection from Research Risks (OPRR) within the NIH recently released a policy circular re-emphasizing the need for scientific justification of in vivo production methods. Therefore, it is important for investigators to review their justification for use of the mouse ascites method for monoclonal antibody production. Have alternatives to live animals been explored? Are antibodies available from commercial sources? Cost and convenience are not considered adequate justification for the use of live animals; it must be based on scientific necessity—that is, the in vitro methods will not produce the needed antibodies. A listing of commercial sources of in vitro production methods and commercial sources of monoclonal antibodies is available on the web at <http://www.nal.usda.gov/awic/pubs/antibody/company.htm> or from RAR by calling 612/624-9100.

by Dale Cooper, DVM, RAR

Graduate School News

The Grant-in-Aid of Research, Artistry, and Scholarship Program is a competitive small-grants program available to faculty of the University of Minnesota. This is a continuation of the list of grants awarded for 1997-98 from the January issue.

Joy McCorrison, Assistant Professor	\$19,020	Ervin Oelke, Professor	\$23,750
<i>Department of Anthropology</i>		<i>Department of Agronomy & Plant Genetics</i>	
Human choices and climate changes: Signal from sensitive marginal zones		Development of best management practices for canola in Minnesota	
Gordon McIntosh, Associate Professor	\$16,667	Stuart Olson, Associate Professor	\$8,278
<i>Division of Science & Mathematics, Morris</i>		<i>Department of Classical & Near Eastern Studies</i>	
The physical properties of freezing soil		An examination of the manuscripts of Aristophanes' <i>Peace</i>	
David McLaughlin, Professor	\$17,338	Deniz Ones, Assistant Professor	\$23,120
<i>Department of Plant Biology</i>		<i>Department of Psychology</i>	
Ectomycorrhizal diversity in Minnesota oak savannah: Above- and below-ground analysis		Potential adverse impact of personality inventories used in personnel selection: An examination of demographic group differences	
Ronald Messner, Professor	\$19,623	Merry Jo Oursler, Assistant Professor	\$23,834
<i>Department of Medicine</i>		<i>Department of Biology, Duluth</i>	
Mapping viral determinants of murine inflammatory myopathy		Estrogen action on osteoclasts in vitro	
Matthew Mitchell, Assistant Professor	\$3,958	J. Bruce Overmier, Professor	\$21,868
<i>Department of Economics</i>		<i>Department of Psychology</i>	
Optimal patent length and breadth with asymmetric information		Application of a novel teaching technique to persons with Korsakoff's syndrome	
Eric Munson, Assistant Professor	\$15,120	Cynthia Peden, Assistant Professor	\$22,019
<i>Department of Chemistry</i>		<i>School of Nursing</i>	
Determining molecular conformations in pharmaceuticals using solid-state NMR		Clinical thinking in nursing practice: A psychological and philosophical investigation	
Sharon Murphy, Assistant Professor	\$12,837	Duanqing Pei, Assistant Professor	\$24,762
<i>Department of Biochemistry, Medical School</i>		<i>Department of Pharmacology</i>	
Cotinine and coumarin metabolism and cytochrome P450 2A6		Invasiveness of MT1-MMP transfected breast cancer cells	
Shahid Naem, Assistant Professor	\$15,120	Margaret Peteraf, Associate Professor	\$19,664
<i>Department of Ecology, Evolution, & Behavior</i>		<i>Curtis L. Carlson School of Management</i>	
Native diversity and resistance to biological invasion		Regulatory reform and managerial choice	
Gary Nelsestuen, Professor	\$25,000	Hans Pfannkuch, Professor	\$19,458
<i>Department of Biochemistry, CBS</i>		<i>Department of Geology & Geophysics</i>	
Membrane association site of vitamin K proteins		Application of fuzzy logic to assess geologic sensitivity to groundwater contamination	
Charles Nelson, Professor	\$19,322	Mark Pharis, Associate Professor	\$6,620
<i>Institute of Child Development</i>		<i>Department of Art</i>	
Neurophysiologic assessment of the at-risk newborn		Multi-medium investigations	
Thomas Noonan, Professor	\$15,870	Sarah Pradt, Assistant Professor	\$13,860
<i>Department of History</i>		<i>Institute of Linguistics & Asian & Slavic Languages & Literatures</i>	
The society of Northwestern Russia in the early Middle Ages		The silences of Miyamoto Yuriko	
Theodore Oegema, Professor	\$18,876	Anne Pusey, Professor	\$19,008
<i>Department of Orthopaedic Surgery</i>		<i>Department of Ecology, Evolution & Behavior</i>	
Post-ribosomal proteoglycan modification		How does dominance rank influence the reproductive success of female chimpanzees?	
		Elise Ralph, Assistant Professor	\$22,745
		<i>Large Lakes Observatory, Duluth</i>	
		Circulation and deep water renewal of Issyk-Kul, Kyrgyzstan	
		Kathryn Reyerson, Professor	\$15,120
		<i>Department of History</i>	
		Women and property in medieval Montpellier	

Graduate School News

Elaine Richardson, Assistant Professor	\$11,510	Joan Smith, Assistant Professor	\$15,000
<i>General College</i>		<i>Department of Theatre Arts & Dance</i>	
An African-centered approach to composition: Freedom through culturally relevant literacy instruction		Babel: A dance/theater/music collaboration	
Thomas Rose, Professor	\$18,040	Nancy Solomon, Assistant Professor	\$21,495
<i>Department of Art</i>		<i>Department of Communication Disorders</i>	
Constructions of space: Narratives of place		Changes in speech following neurosurgical intervention in Parkinson's disease	
Alexander Rothman, Assistant Professor	\$20,520	Mani Subramani, Assistant Professor	\$22,670
<i>Department of Psychology</i>		<i>Curtis L. Carlson School of Management</i>	
The dynamic relation between health behavior and health beliefs: Predicting weight loss		Linking information technology use to benefits in interorganizational relationships: The role of relationship-specific investments	
Mark Rutherford, Assistant Professor	\$23,420	Anuradha Subramanian, Assistant Professor	\$21,854
<i>Department of Veterinary Pathobiology</i>		<i>Department of Biosystems & Agricultural Engineering</i>	
Sex differences in obesity: The TNF-alpha receptor (TNFR) knockout model		Mammary-tissue-specific expression and secretion of recombinant viral proteins	
Manuel Santos, Professor	\$15,120	Gunnar Swanson, Assistant Professor	\$14,590
<i>Department of Economics</i>		<i>Department of Art, Duluth</i>	
Solving stochastic models of endogenous growth		Digital video for animated typography	
Elizabeth Santschi, Assistant Professor	\$21,600	Joseph Talghader, Assistant Professor	\$22,020
<i>Department of Clinical & Population Sciences</i>		<i>Department of Electrical Engineering</i>	
Molecular basis for the Overo Lethal White Syndrome in horses		Manufacturing and assembly for micro-optic systems	
Sachin Sapatnekar, Associate Professor	\$15,120	Rina Tannenbaum, Assistant Professor	\$16,560
<i>Department of Electrical Engineering</i>		<i>Department of Chemical Engineering & Materials Science</i>	
Algorithms for performance-driven VLSI routing		Size control of metal nanoparticles and their interactions with reactive polymers	
Timothy Schacker, Assistant Professor	\$25,000	Arlene Teraoka, Associate Professor	\$7,560
<i>Department of Medicine</i>		<i>Department of German, Scandinavian & Dutch</i>	
Virologic determinants of HIV transmission		Turkish-German literature and German literary studies	
Leslie Schiff, Associate Professor	\$23,728	Larry Thompson, Professor	\$2,000
<i>Department of Microbiology</i>		<i>Department of Chemistry, Duluth</i>	
Analysis of reovirus proteins which affect translation		Theoretical and structural studies of adducts of rare earth tris-B-diketonates	
Brad Seguin, Professor	\$17,750	Cindy Tong, Assistant Professor	\$6,500
<i>Department of Clinical & Population Sciences</i>		<i>Department of Horticultural Science</i>	
Equine conceptus prostaglandin inhibitor factor		Understanding anthocyanin synthesis in potato periderm	
Matthew Senior, Assistant Professor	\$6,360	James Tracy, Professor	\$15,120
<i>Division of Humanities, Morris</i>		<i>Department of History</i>	
Representing animals in classical France		Financing the Dutch Revolt: Holland's struggle for solvency, 1572-1609	
Marcia Shew, Assistant Professor	\$15,450	Charles Truwit, Associate Professor	\$16,916
<i>Department of Pediatrics</i>		<i>Department of Radiology</i>	
Use of home pregnancy testing among Twin Cities' adolescents		Development of non-invasive functional MRI to assess language and memory lateralization in human brain	
Gordon Silverstein, Associate Professor	\$9,342	Richard Voyles, Assistant Professor	\$17,360
<i>Department of Political Science</i>		<i>Department of Computer Science</i>	
Deference or abdication? Judicial institutions and the political integration of Europe		Wearable multi-element tactile activation for virtual reality	
Alan Smith, Associate Professor	\$18,620	Billie Wahlstrom, Professor	\$10,577
<i>Department of Horticultural Science</i>		<i>Department of Rhetoric</i>	
A molecular leash for the release of genetically engineered plants		The interplay of gender, technology, and ethics: The case of Ravensbruck	

Graduate School News

Bruce Walcheck, Assistant Professor	\$19,756	Shee Wong, Professor	\$3,920
<i>Department of Veterinary Pathobiology</i>		<i>Department of Finance & Management Information Sciences, Duluth</i>	
Association of calmodulin and L-selectin		Option implied volatility as a measure of diversification effectiveness in bank mergers	
Li-Na Wei, Assistant Professor	\$15,120	Lucile Wrenshall, Assistant Professor	\$15,000
<i>Department of Pharmacology</i>		<i>Department of Surgery</i>	
Studies of orphan nuclear receptor TR2 gene transcription and isoform production		Sequestration of interleukin 2 in the splenic red pulp via interaction with heparan sulfate	
Susan Weller, Assistant Professor	\$17,040	Nkasa Yelengi, Assistant Professor	\$10,658
<i>Department of Entomology</i>		<i>Department of History, Duluth</i>	
What is a butterfly? An investigation of evolutionary origins and relationships		The PFB railroad: Society, economy, and culture in rural Katanga, colonial Zaire, 1923-1960	
Jonathan Wheaton, Professor	\$12,500	Zhi-Li Zhang, Assistant Professor	\$22,000
<i>Department of Animal Science</i>		<i>Department of Computer Science</i>	
Gamma radiospectrometer		Active servers: A new paradigm and server architecture for multimedia information distribution	
Donna Whitney, Assistant Professor	\$23,905	Jack Zipes, Professor	\$10,080
<i>Department of Geology & Geophysics</i>		<i>Department of German, Scandinavian & Dutch</i>	
Durations and rates of mountain-building events		<i>The Oxford Companion to Fairy Tales</i>	
Susan Wick, Professor	\$20,000		
<i>Department of Plant Biology</i>			
Reverse transposon tagging to examine functions of maize tubulin genes			

National Science Foundation

CISE Directorate Reorganized

Last November, the National Science Foundation reorganized its Directorate for Computer and Information Science and Engineering (CISE).

- The Division of Computer and Computation Research (CCR), the Division of Microelectronic Information Processing Systems (MIPS), and the Office of Cross-Disciplinary Activities (CDA) were closed.
- The Division of Computing-Communications Research (C-CR) and the Division of Experimental and Integrative Activities (EIA) were established. EIA will place strong emphasis on experimental research, consolidating and expanding similar activities previously carried out in CCR and MIPS, and will have management oversight for the CISE Science and Technology Centers (STCs). EIA has also absorbed many of the former CDA activities, such as infrastructure, instrumentation, and human resource development.
- The Division of Information, Robotics, and Intelligent Systems (IRIS) was modified and renamed the Division of Information and Intelligent Systems (IIS). IIS will support research in robotics, interactivity, knowledge

networking, digital libraries, information management, and other systems of distributed intelligence and human-centered approaches.

- The Division of Advanced Scientific Computing (ASC) has been renamed the Division of Advanced Computational Infrastructure and Research (ACIR).
- The Division of Networking, Communication Research, and Infrastructure (NCRI) has been renamed the Division of Advanced Networking Infrastructure and Research (ANIR). The associated research programs have been redefined to focus more closely on existing and future infrastructure.

New program announcements are in progress and new deadline dates will be established. In the interim, proposers should use the information in the current program announcements and solicitations and adhere to the deadlines listed in the CISE Directorate section of the NSF Bulletin. For more detailed information, contact the program officer listed for the program of interest. The NSF Guide to Programs for FY 1998 (NSF 97-150) is now available on the NSF home page <http://www.nsf.gov>.

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phil@orta.umn.edu.**

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More Information

To receive copies of NIH and NSF application kits, please call Therese Graner at 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

Lincoln Institute of Land Policy

The Lincoln Institute of Land Policy announces a request for proposals for education and research activities. The institute's mission is to improve and contribute to the land and tax policy debate in the United States, Latin America, and other regions. To accomplish its goals, the institute brings together diverse viewpoints to expand the body of useful knowledge and to make that knowledge accessible and comprehensible to those directly involved in making decisions about land use and tax policy. The three program areas of interest to the institute are:

Taxation of Land and Buildings, which examines the special nature of taxes on real property, particularly those based on market value. The institute addresses the economic effects of such taxes, their legal structure and interpretation, and their administrative and political implications, especially in the taxation of land value, both because it has potential to raise revenue efficiently and because it captures a socially created form of wealth.

Land Use and Regulation, which focuses on the processes, plans, and policies that affect the development of land in the "fringe" areas of metropolitan regions, the reuse of vacant and underutilized land, and the preservation of environmentally and ecologically significant land. While the institute is interested in the economically efficient use of land, it takes a more comprehensive perspective for evaluating land use and its regulation. It seeks to understand how the development, reuse, and preservation of land affects other public values and goals, such as access to land, fairness, character of the society, and the quality of life.

Land Values, Property Rights and Ownership, which studies how the action of both private and public sectors produce land values, distribute rights to land, and develop methods to measure land value. This area touches upon larger issues of property rights, the operations of information and formal land markets in creating and distributing

land value, and appropriate policies for recovering the cost of public investment in land.

The institute generally funds projects up to \$30,000; indirect costs are not allowed.

The institute also supports fellowship programs for doctoral students. Dissertation fellowships of \$5,000 support development of a thesis proposal or the thesis research. Additionally, the institute is also able to accommodate a small number of visiting fellows for stays ranging from one month to one year. Visiting fellows typically obtain partial or full support from their employers or other sources.

The application deadline is **March 2, 1998**. A copy of the RFP is available from ORTTA and may be requested by calling Therese Graner at 624-7021 or by sending a message to gopher@ortta.umn.edu. Or contact the Lincoln Institute of Land Policy, 113 Brattle Street, Cambridge, MA 02138; 617/661-3016, fax 617/661-7235, help@lincolninst.edu, <http://www.lincolninst.edu>.

Spencer Foundation

The Spencer Foundation supports research that contributes new knowledge and understanding to the field of education thought and practice. Grantmaking categories are:

Major Research Grants fund projects that investigate ways to yield new knowledge about education and improve it around the world. The program supports research drawn from a wide range of disciplinary and interdisciplinary perspectives and funds projects ranging from medium-sized studies that can be completed in a year by one individual to extensive collaborative studies that last several years. Grants start at \$12,000.

Small Grants help scholars from a broad range of academic fields build on their past work or venture into new domains. The program encourages scholars from diverse disciplines to develop ideas and approaches that extend the conventional limits of a research area or method relevant to education. Grants range from \$1,000 to \$12,000.

There are **no application deadlines**. Applicants for major grants should submit a brief preliminary proposal in the form of a statement with attachments. For further information contact (for major grants) John Barcroft, Vice President, or (for small grants) Therese Pigott, Spencer Foundation, 900 North Michigan Avenue, Suite 2800, Chicago, IL 60611-1542; 312/337-7000, fax 312/337-0282, <http://www.spencer.org>.

■ National Institute of Standards and Technology Advanced Technology Program

The Advanced Technology Program (ATP) at the National Institute of Standards and Technology invests directly in the nation's economic growth by working with industry to develop new technologies with strong commercial potential. The first round of FY 1998 competitions to support innovative, cost-shared industrial research and development under the ATP Program has been announced.

The round includes one general competition, open to proposals from all areas of technology, and seven focused program competitions covering three existing ATP program areas—Catalysis and Biocatalysis Technology, Digital Video in Information Networks, and Tools for DNA Diagnostics—and four new programs—Microelectronics Manufacturing Infrastructure, Selective-Membrane Platforms, Photonics Manufacturing, and Premium Power. Approximately \$82 million is available for first-year funding of new projects.

The FY 1998 competitions also are the first to incorporate recently adopted changes to the rules that govern the ATP. One change defines a "large company" as one with \$2,578 million in annual corporate revenues. Another states that large companies or their subsidiaries, competing in the ATP as a single company, must provide cost-share funding of at least 60 percent of the total project costs for each calendar quarter of the project.

Although by law only for-profit companies and industry-led joint ventures are allowed to receive ATP awards, universities, as a traditional source of research excellence, play a significant role in many ATP projects either as sub-contractors to private companies or as members of industry-led joint ventures. Universities are also a valuable source of ideas for new ATP focused program areas and are encouraged to participate in this process.

Further information on the ATP, including copies of the new proposal preparation kit (dated December 1997), Federal Register notices, and the competition announcements, are available by contacting the ATP web site at <http://www.atp.nist.gov>; by e-mail at atp@nist.gov; by calling 800/ATP-FUND (287-3863); or by faxing a request to 301/926-9524 or 301/590-3053. The media contact is Michael Baum, 301/975-2763, michael.baum@nist.gov.

■ Department of Energy Energy Biosciences

The Energy Biosciences program has the mission of generating fundamental biological information about plants and 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 providing 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, 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.

Awards will average close to \$100,000 per year for three years.

A preapplication, with reference to program notice 98-09, is required by **February 27, 1998**. The preapplication should consist of a two- to three-page concept paper on the research contemplated, focusing on the scientific objectives and significance of the planned research and including an outline of the approaches planned plus any information relating to the planned research. No budget information or biographical data need be included, nor is an institutional endorsement necessary. Send to U.S. Department of Energy, Office of Basic Energy Sciences, Attn. Program Notice 98-09, ER-17, Division of Energy Biosciences, 19901 Germantown Road, Germantown, MD 20874-1290. Fax submissions are acceptable to 301/903-1003.

Formal applications will be requested and will be due **June 17, 1998**. For further information contact Ms. Pat Snyder at the above address; 301/903-2873, pat.snyder@oer.doe.gov.

■ Department of Agriculture Biotechnology Risk Assessment Research Grants

Applications are invited for competitive grant awards under the Biotechnology Risk Assessment Research Grants Program offered by the U.S. Department of Agriculture. The purpose of the program is to assist federal regulatory agencies in making science-based decisions about the safety of introducing into the environment genetically modified organisms, including plants, microorganisms, fungi, bacteria, viruses, arthropods, fish, birds, mammals, and other animals.

The research emphasis is on risk assessment, not risk management. Risk assessment is defined as the science-based evaluation and interpretation of factual information in which a given hazard, if any, is identified, and the consequences associated with the hazard are explored. Proposals addressing the following topics are requested:

1. Research on the introduction into the environment (not in a contained facility) of genetically engineered organisms. The data collected may include survival, reproductive fitness, genetic stability, genetic recombination, horizontal gene transfer, loss of genetic diversity, or enhanced competitiveness. Organisms may include all those mentioned above.
2. Research on large-scale deployment of genetically engineered organisms, especially commercial uses of such organisms, with special reference to considerations that may not be revealed through small-scale evaluations and tests.
3. Research to develop statistical methodology and quantitative measures of risks associated with field testing of genetically modified organisms.
4. The program will provide partial funding to organize a scientific research conference that brings together scientists and regulators to review the science-based evidence, if any, that the introduction of a pest resistance gene into a crop plant poses the risk of increasing the fitness of weedy, sexually compatible relatives of the crop plant.

The application deadline is **March 24, 1998**. To obtain application materials, send a message to psb@reusda.gov which includes your name, postal mailing address, and telephone number, and which states you wish to receive materials for the FY 1998 Biotechnology Risk Assessment Research Grants Program.

■ Great Lakes Protection Fund

The Great Lakes Protection Fund is inviting preproposals for calendar year 1998. The criterion used to select projects is the anticipated benefit to the health of the Great Lakes ecosystem. Projects must identify a significant, tangible ecological outcome and a pragmatic plan to achieve it. Preproposals should identify the expected outcome of the work to be undertaken as precisely as possible.

The fund prefers to support projects which take concrete actions to achieve basin-wide ecological results. Support for activities such as conferences, environmental education, and basic research will be considered for support only when they are part of a broader, regional action strategy which is designed to impact the entire ecosystem.

The preproposal must be limited to no more than two pages of text, plus no more than a two-page resume for the project manager, under a specific cover sheet.

Preproposals may be submitted at any time **between now and June 30, 1998**; applicants are asked to apply as early as possible, as the fund will begin to review preproposals upon receipt. A copy of the guidelines, plus a copy of the cover sheet, are available from ORTTA and may be requested by calling 624-7021 or sending a message to gopher@ortta.umn.edu. For other information contact the Great Lakes Protection Fund, 35 East Wacker Drive, Suite 1880, Chicago, Illinois 60601; 312/201-0660.

■ National Endowment for the Humanities Humanities Challenge Grants

The National Endowment for the Humanities has created a Challenge Grants Program to encourage institutions to seek long-term financial support for improved teaching, research, and public programs in the humanities, through active fundraising. The program provides endowment for humanities professorships, faculty stipends, library acquisitions, humanities centers, and collaboration with other cultural institutions. It also supports renovation, construction, and computer technology for the humanities.

The application deadline is **May 1, 1998**. For more information call 202/606-8309 or e-mail challenge@neh.gov. You can also go to <http://www.neh.gov>.

■ National Science Foundation Action Agenda for Systemic Engineering Education

The environment for engineering practice is changing, impelled by the shift from defense to commercial competition as a major driver for engineering employment, the impact of exploding information technology, the globalization of both manufacturing and service delivery, and the imperatives of environmental protection and sustainable development. Employers emphasize that success as an engineer increasingly requires—in addition to strong technical capability—skills in communication and persuasion, ability to lead and work effectively as a member of a team, understanding of the nontechnical forces that affect engineering decisions, and a commitment to lifelong learning.

Acquiring such characteristics is unlikely with traditional, lecture-based instruction. A new engineering education paradigm is needed, characterized by active, project-based learning; horizontal and vertical integration of subject matter; introduction of mathematical and scientific concepts in the context of application; close interaction with industry; broad use of information technology; and a faculty devoted to developing emerging professionals as mentors and coaches.

The Action Agenda for Systemic Engineering Education Reform seeks truly innovative approaches to the above. In view of the broad availability of educational models and materials already developed, it is expected that many projects will focus on the critical evaluation, dissemination, and institutionalization of such models and materials. However, no strict constraints will be placed on the types of projects proposed. The program is outcomes-based and seeks proposals for effective actions to achieve specified goals in ways that will affect significant numbers of engineering students.

Proposed projects may include contributions from mathematics; physical, biological and information sciences; social and behavioral sciences; and arts and humanities that explicitly support learning experiences for engineering students. Interdisciplinary proposals are particularly encouraged.

Award size is expected to range from \$100,000 to \$600,000 per year for up to three years. Cost sharing is expected but not required and may come from any private or nonfederal public source. It may be cash or in-kind, fairly valued.

{next column}

The application deadline is **March 31, 1998**. A copy of the announcement is available from ORTTA and may be requested by calling Therese Graner at 624-7021 or by sending a note to gopher@ortta.umn.edu. The announcement may also be found at <http://www.nsf.gov/cgi-bin/getpub?nsf9827>. Other inquiries may be directed to Dr. Ernest Smerdon, Engineering Education and Centers Division, National Science Foundation, 4201 Wilson Boulevard, Suite 585, Arlington, VA 22230; 703/306-1380, fax 703/306-0326, esmerdon@nsf.gov.

■ Business Plan Competition Has Pushed Back Its Deadlines

The University of Minnesota Business Plan Competition, which seeks to award cash and recognition to entrepreneurs' business plans, has moved its deadlines back:

Initial one-page applications are now due **February 16**.

Seminars to help applicants write business plans will take place during February and March.

Complete business plans are due **March 31**.

Presentations to the judges will take place in April and May.

The competition is a collaboration of the University and Twin Cities businesses. It will award three promising business plans \$25,000, \$10,000, and \$2,500 in cash and services, as well as valuable recognition.

The competition is open to Minnesota-based for-profit companies with less than \$2 million in sales and \$1 million in capital.

For information, call the Carlson Center for Entrepreneurial Studies at the Carlson School of Management, Richard Cardozo, director, 612/624-5524. Also see the December '97 *Research Review*, <http://www.ortta.umn.edu/RR/97-12/contents.htm>.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1997	337	\$ 47,646,292
Awards Processed		
December 1997	199	20,066,199
Proposals Submitted		
July 1997 - December 1997	1,889	336,844,477
Awards Processed		
July 1997 - December 1997	1,545	173,221,870
Proposals Submitted		
July 1996 - December 1996	1,867	268,057,505
Awards Processed		
July 1996 - December 1996	1,428	157,195,187

Crystal Structure of L-3-Hydroxacyl CoA Dehydrogenase

Joseph J. Barycki, Biochemistry, Medical School
Leonard J. Banaszak, Biochemistry, Medical School
NIH, NIDDK
\$24,292 - 1/1/98-12/31/98

In Vivo Quantitation of Endothelial Cell Adhesion Molecules

Stanley L. Erlandsen, Cell Biology and Neuroanatomy
Minnesota Medical Foundation
\$14,900 - 1/1/98-12/31/98

Intracellular Infection by Invasive Group A Streptococci

Paul P. Cleary, Microbiology
NIH, NIAID
\$113,822 - 12/4/97-11/30/98

Membrane-Type Matrix Metalloproteinase in Angiogenesis

Duanqing Pei, Pharmacology
American Heart Association, Inc.
\$165,000 - 1/1/98-12/31/98

Transgenic Psychomodulation

Frank H. Burton, Pharmacology
Tourette Syndrome Association, Inc.
\$36,600 - 1/1/98-12/31/98

Risk of Laparoscopy in Infants: Evaluation in a Piglet Model

Kumar G. Belani, Anesthesiology
David Beebe, Anesthesiology
John A. Reichert, Obstetrics and Gynecology
Minnesota Medical Foundation
\$9,300 - 1/1/98-12/31/98

Photodynamic Therapy of Basal Cell Carcinoma Using Oral Delta-Aminolevulinic Acid

Whitney Tope, Dermatology
Minnesota Medical Foundation
\$10,000 - 12/1/97-11/30/98

Structure/Function Analysis of T Cell B1 Integrin

Yoji Shimizu, Laboratory Medicine and Pathology
NIH, NIAID
\$195,557 - 12/1/97-11/30/98

Human Leukemia and the Bone Marrow Microenvironment

Tucker W. Le Bien, Laboratory Medicine and Pathology
NIH, NCI
\$194,287 - 12/5/97-11/30/98

Clonality of Hematopoiesis in Fanconi Anemia

Anil K. Tadavarthi, Laboratory Medicine and Pathology
Stella M. Davies, Pediatrics
Viking Childrens Fund
\$9,290 - 12/1/97-11/30/98

Crooked Tail: Gene Expression in a Neural Tube Defect Model

Margaret E. Ross, Neurology
NIH, NINDS
\$198,530 - 12/15/97-11/30/98

Treatment of Attention Deficit Hyperactivity Disorder (ADHD) in Children with Tourette's Syndrome

Paul J. Tuite, Neurology
University of Rochester Medical School
\$19,903 - 7/1/97-6/30/98

Chemomyectomy for Eyelid Spasm

Linda McLoon, Ophthalmology
Jonathan D. Wirtschafter, Ophthalmology
NIH, NEI
\$203,256 - 9/30/97-9/29/98

Cellular Studies of mRNA Expression and Risk of Diabetic Nephropathy

Abhay Vats, Pediatrics
Viking Childrens Fund
\$11,000 - 12/1/97-11/30/98

Juxtaglomerular Apparatus Structure and Function in Type I Insulin Dependent Diabetes

Rika Moriya, Pediatrics
S. Michael Mauer, Pediatrics
Viking Childrens Fund
\$10,900 - 12/1/97-11/30/98

Genetic Susceptibility of Syndrome X

Alan Sinaiko, Pediatrics
Antoinett Moran, Pediatrics
Viking Childrens Fund
\$10,900 - 12/1/97-11/30/98

Divergent Transcriptional Regulation in Inflammation

Sarah J. Schwarzenberg, Pediatrics
Viking Childrens Fund
\$10,000 - 12/1/97-11/30/98

Evaluation of Patient-Triggered Partial Liquid Ventilation

Ellen Bendel-Stenzel, Pediatrics
Mark Mammel, Pediatrics
Viking Childrens Fund
\$9,917 - 12/1/97-11/30/98

Association of Blood Pressure and Microalbuminuria in Adolescents

Blanche M. Chavers, Pediatrics
Alan Sinaiko, Pediatrics
Viking Childrens Fund
\$8,700 - 12/1/97-11/30/98

Molecular Mechanism for Control of INT1 in *Candida Albicans*

Cheryl A. Gale, Pediatrics
Viking Childrens Fund
\$8,500 - 12/1/97-11/30/98

Cytokines and Disappearing Bile Duct Syndromes in Patients with Liver Disease

James Y. Wang, Pediatrics
Minnesota Medical Foundation
\$5,000 - 1/1/98-12/31/98

Dietary Soy and Growth Factor Activity in Healthy Females Julie A. Ross, Pediatrics	Minnesota Medical Foundation \$6,000 - 1/1/98-12/31/98
Anatomic and Functional Brain Lesions in Newborn Infants Frank R. Mattia, Pediatrics Raye-Ann De Regneir, Pediatrics	Viking Childrens Fund \$4,005 - 12/1/97-11/30/98
Manual on Nutrition Management of the Pregnant Adolescent Mary Story, Epidemiology	HRSA, MCH \$26,600 - 9/15/97-7/31/98
Effects of an Energy Conservation Course for Individuals with Multiple Sclerosis Virgil Mathiowetz, Physical Medicine and Rehabilitation	American Occupational Therapy Foundation \$30,000 - 1/15/98-1/14/00
Timing of Smoking Intervention in Alcohol Treatment Anne Joseph, Medicine	NIH, NIAAA \$1,068,366 - 9/1/97-2/28/02
Thermoregulation and Heat Exchange in a Nonuniform Thermal Victor S. Koscheyev, Kinesiology and Leisure Studies	NASA \$223,664 - 9/1/97-8/31/98
Fine Mapping of Putative Quantitative Trait Loci (QTLs) Affecting Ovulation Rate on Porcine Chromosome 8 Leeson Alexander, Veterinary Pathobiology Lawrence B. Schook, Veterinary Pathobiology Craig W. Beattie, Veterinary Pathobiology	U.S. Department of Agriculture \$200,000 - 11/15/97-11/30/99
Platelet Decrement Associated with RPR 109891 in Dogs Douglas Weiss, Veterinary Pathobiology Victor Perman, Veterinary Pathobiology	Rhone-Poulenc Rorer Pharm, Inc. \$110,224 - 5/1/97-8/31/98
Simulation of Turbulent Hypersonic Flows Graham V. Candler, Aerospace Engineering and Mechanics	USDoD, Air Force \$67,916 - 10/1/97-9/30/00
ASCI "Blue" Project Paul R. Woodward, Astronomy	Los Alamos National Laboratory \$50,000 - 10/1/97-2/28/98
Tailored Interfaces with Amphiphilic Polymers Matthew V. Tirrell, Chemical Engineering and Materials Science	National Science Foundation \$300,000 - 9/15/97-8/31/98
Optimization of Sperm Cryopreservation John C. Bischof, Mechanical Engineering	Reproductive Health Associates, PA \$53,161 - 10/1/97-9/30/98
Fixtureless Tube Bending Kim A. Stelson, Mechanical Engineering	Eagle Precision Tech, Inc. \$30,000 - 1/1/98-12/31/98
Orthopaedic Devices Study Arthur G. Erdman, Mechanical Engineering	Kennedy and Co. \$5,000 - 9/15/97-12/15/97

Compiling Programs for Concurrent Multithreaded Architecture Pen-Chung Yew, Computer Science and Engineering	Intel, Inc. \$90,000 - 10/16/97-10/15/98
Internet Integrated Services Over ATM Network David H. Du, Computer Science and Engineering	Sandia National Laboratories \$7,153 - 10/15/97-12/31/97
Circuit-Level Performance-Driven Optimization of VLSI Circuits Sachin S. Sapatnekar, Electrical Engineering	Intel, Inc. \$50,000 - 1/1/98-12/31/98
Modeling the Hydrologic Cycle of the Pan-Arctic Watershed Jennifer P. York, Geology and Geophysics Mark Person, Geology and Geophysics	National Aeronautics and Space Administration \$22,000 - 9/1/97-8/31/98
Dynamical Systems, Ocean Structures, and Adaptive Model Identification Willard J. Miller, Mathematics Robert D. Gulliver, Mathematics	USDoD, Navy \$30,000 - 11/15/97-11/14/98
Superconductor/Ferromagnet Interface Structures Allen M. Goldman, Physics and Astronomy	USDoD, Navy \$90,000 - 11/1/97-2/25/01
Support for the Soudan Mine Crew Earl Peterson, Physics and Astronomy	Fermi National Accelerator Laboratory \$88,000 - 10/1/97-3/31/98
An Experimental Investigation of Partial Cavitation on 2D and Finite Span Hydrofoils Roger E. A. Arndt, St. Anthony Falls Laboratory	USDoD, Navy \$50,000 - 10/1/97-9/30/99
Study of Me²⁺ Ion Interaction with Noncanonical Multi-Chain Structures of Nucleic Acid Victor A. Bloomfield, Biochemistry, CBS	U.S. Civilian Research and Development Foundation \$6,500 - 10/1/97-9/30/99
Combinatorial Biosynthesis: A New Technology for the Production of Novel Polyhydroxyalkanoate Bipolymers David H. Sherman, Biological Process Technical Institute	USDoD, Navy \$65,000 - 11/10/97-9/30/00
Analysis of the Mitotic Role of Cytoplasmic Dynein in <i>Drosophila</i> Thomas S. Hays, Genetics and Cell Biology Edward Wojcik, Genetics and Cell Biology	NIH, NIGMS \$29,600 - 1/1/98-12/31/98
Identification of Telomere End-Binding Proteins in Yeast Judith G. Berman, Plant Biology Stephen Johnston, Plant Biology	NIH, NIGMS \$25,420 - 1/1/98-12/31/98
CANTAB Measurements of Prefrontally-Guided Behavioral Functions Monica M. Luciana, Child Development	University of Pittsburgh \$58,850 - 9/1/97-8/1/98

Topics in Economic Theory

Beth E. Allen, Economics

National Science Foundation
\$50,000 - 10/1/97-3/31/99**Serum IGF-1 and Growth Inhibitors in Swine Growth and Health**Michael E. White, Animal Science
Marcia R. Hathaway, Animal Science
William R. Dayton, Animal ScienceBiotechnology Research and Development Corp.
\$60,000 - 10/1/97-9/30/98**Sustainable Approach to Controlling Mite Pests of Honey Bees**

Marla Spivak, Entomology

University of Nebraska
\$78,750 - 7/15/97-7/14/99**Model Management Program for Private Aquaculture**

Anne R. Kapuscinski, Fisheries and Wildlife

Great Lakes Fishery Commission
\$20,000 - 8/1/97-8/30/98**Recreation Fees in the National Park Service**

David Lime, Forest Resources

University of Idaho
\$5,200 - 7/16/97-7/17/97**Evaluating the Long-Term Effects of Teacher Enhancement**Frances Lawrenz, Curriculum and Instruction
Douglas Huffman, Curriculum and InstructionNational Science Foundation
\$499,780 - 10/1/97-1/31/01**Center for the Improvement of Early Reading Achievement**Barbara M. Taylor, Curriculum and Instruction
Paul Van Den Broek, Educational PsychologyUniversity of Michigan
\$103,826 - 10/1/97-9/30/98**Stereotypic Media Representations of Female Athletes**Mary Jo Kane, Kinesiology and Leisure Studies
Shelly Shaffer, Kinesiology and Leisure StudiesMinnesota Women's Fund
\$4,992 - 1/1/98-8/31/98**National Institute for Domestic Violence in African American Communities**

Oliver Williams, Social Work

Department of Health and Human Services
\$189,984 - 9/30/97-9/29/98**Value of Congestion Information for Commercial Vehicle Operation**

Fred Beier, Marketing and Logistics Management

St of Minn., Department of Transportation
\$40,485 - 11/1/97-8/31/98**Teaching Leadership Awards Program**

Jan Smith, Human Resources

Ohio State University
\$40,000 - 11/1/97-12/31/97**Differential Turnover of Membrane Phospholipids**

Harald H. Schmid, Hormel Institute

NIH, NIGMS
\$238,292 - 12/1/97-11/30/98**Nongenomic Effects of Estrogen on Osteoclast-like Cells**

Merry Jo Oursler, Biology, Duluth

Minnesota Medical Foundation
\$9,000 - 11/1/97-10/31/98**Habitat Health Services**

Barbara A. Elliott, Medicine, Duluth

Ordean Foundation
\$17,512 - 11/1/97-10/31/98**Expression of MC5 Receptor Construct in HeLa Cells**

Benjamin L. Clarke, Biochemistry and Molecular Biology, Duluth

Minnesota Medical Foundation
\$8,800 - 11/1/97-10/31/98**Development and Evaluation of Multi-Scale Mechanistic Indicators**Carl Richards, Natural Resources Research Institute, Duluth
Lucinda Johnson, Natural Resources Research Institute, Duluth
George E. Host, Natural Resources Research Institute, DuluthEnvironmental Protection Agency
\$925,000 - 10/1/97-9/30/00**Matallurgical Evaluation of CuNi Ores of the Duluth Complex**Rodney L. Bleifuss, Natural Resources Research Institute, Duluth
Blair R. Benner, Natural Resources Research Institute, DuluthSt. of Minn., Department of Natural Resources
\$50,000 - 7/1/97-6/30/98**GIS Analysis for Minnesota Point Protection**

Carol A. Johnston, Natural Resources Research Institute, Duluth

Park Point Community Club
\$14,000 - 9/29/97-5/1/99**Minnesota's Bird Diversity Initiative**

Gerald Niemi, Natural Resources Research Institute, Duluth

St. of Minn., Department of Natural Resources
\$310,000 - 10/2/97-12/31/99**Plant Layout Design**

L. A. Kendall, Industrial and Technical Studies, Duluth

Duluth Engineering and Manufacturing, Inc.
\$1,188 - 9/1/97-10/31/97**Carbon Concentration Mechanism in Plants and Algae**

Arun Goyal, Biology, Duluth

U.S. Department of Agriculture
\$100,000 - 10/1/97-9/30/99**Assesing Exotic Maize Germplasm for Productive Traits in Minnesota**

Qinqin Liu, Biology, Duluth

Minnesota Corn Growers Association
\$9,800 - 11/3/97-2/1/99**Tutoring and Mentoring Services to K-12 Children**

J. T. McCarthy, Education and Human Service Professions, Duluth

Duluth Clinic, Ltd.

\$1,500 - 7/1/97-6/30/98

Project Meet: Morris and El Paso Exploring Together

Gwen Rudney, Elementary and Secondary Education, Morris

Ackerman Family Foundation
\$6,498 - 12/1/97-11/30/98**Communitarity Collaborative Compact — Model Dissemination**

Roger S. McCannon, University College

St. of Minn., Higher Education Services Office
\$14,000 - 10/3/97-8/31/98**Corrections:****Evaluation of Respirator Comfort**Victor S. Koscheyev, *Kinesiology and Leisure Studies*

Gloria R. Leon, Psychology

Minnesota Mining and Manufacturing Foundation
\$34,264 - 2/17/97-8/15/97**Heritage Study (Phase 2)—Genetics Response to Exercise and Risk Factors**

Arthur S. Leon, Public Health

Robert C. Serfass, Kinesiology and Leisure Studies

Ava J. Walker, Kinesiology and Leisure Studies

NIH, NHLBI

\$236,054 - 9/30/97-8/32/00

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>

	<u>name</u>	<u>number</u>	<u>e-mail</u>
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration, information 624-5599			spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Therese Graner	624-7021	therese@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
NIH, USDE, CDC, FDA, HRSA, DHHS	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Foundations, DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Foundations, DHHS	Leslie Flaherty	626-8267	leslie-f@ortta.umn.edu
USDA, DOJ, HUD (contracts only); USIA, AID, USDE, DHHS	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
USDA, DOJ, HUD (grants only); DHHS	Karen Sachi	626-0270	karen@ortta.umn.edu
NASA, DOD (AF, Army), misc federal (contracts only), DHHS	Virginia Olson	624-0288	ginny@ortta.umn.edu
DOD (Navy), misc federal (grants only), DHHS	David Welter	625-1359	dave@ortta.umn.edu
USDA (contracts only), USDE, NIH, HRSA, FDA, CDC, DHHS	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
USDA (grants only), DHHS	Doug Johnson	624-4121	doug@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
MN Technology, MN Health, NSF, VA	Todd Morrison	624-5066	todd@ortta.umn.edu
NSF	Launa Shun	624-2521	launa@ortta.umn.edu
NSF	Sandy Kenyon	624-5967	sandy@ortta.umn.edu
Ag. associations, other private	Kate Tennesen	626-7718	kate@ortta.umn.edu
Voluntary health	Liz Li	624-0810	liz-l@ortta.umn.edu
St of MN, governments	Amy Levine	626-7441	amy-l@ortta.umn.edu
St of MN, governments	Tracy McClun	626-8265	tracy@ortta.umn.edu
Business and industry, Medical School	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Business and industry, Medical School	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Business and industry, health sciences	Gary Gillet	624-5571	gary@ortta.umn.edu
Patents and Technology Marketing, information 624-0550, fax 624-6554			ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	TBA		
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	
Effort help line		625-7824	effort@ortta.umn.edu
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@ortta.umn.edu
Duluth, Office of Research & Technology Transfer			
Sr. grant and contract administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Morris, Grants Development, http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462mahoneyt@caa.mrs.umn.edu	
	related numbers		
Sponsored Financial Reporting, fax 626-0321			
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of MN	TBA		
Supervisor, industry, NSF, subcontracts	TBA		
Supervisor, NIH, USDE	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs, fax 626-6061			
Director	Moira Keane	626-5654	irb@umn.edu iacuc@umn.edu

Mailing List Changes

**ORTTA cannot change the faculty mailing list.
It is generated by the Staff Demographics office.**

For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

For changes regarding other labels, please complete the following:

Change **Name:** _____
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Delete **Building & Room No.:** _____
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RESEARCH REVIEW

Office of Research and Technology Transfer

March 1998

Sponsored Spending Steady, Patents Up

V.P. Brenner Makes Annual Report to Regents; ORTTA Publishes *Levels and Trends*

Sponsored expenditures for research, training, and public service continue to grow at roughly 3 percent per year, with the relative proportions from federal, state, and private funders holding steady. The University received 66 patents in fiscal 1997, up from 29 patents in fiscal 1996. Among U.S. universities, U of M has ranked ninth in R&D expenditures for science and engineering for three years—fiscal 1994, '95, and '96; and it ranks fourth in the number of doctorates awarded in all fields during academic 1995-'96.

Vice President for Research Mark Brenner presented the annual report of University research to the Board of Regents' February meeting, and as this *Research Review* goes to press, ORTTA is preparing to publish *Levels and Trends in Sponsored Programs, Fiscal Year 1997*, its annual report of research and technology transfer statistics.

Some of the more significant and general numbers are reported below. Many details regarding proposals, awards, expenditures, and obligations; individual colleges and departments; and trends and rankings over the years are available by calling Mary Bendtsen at ORTTA, 612/624-0583, mary-b@ortta.umn.edu.

From fiscal 1996 to 1997, there were few, if any, major changes in the amount of sponsored expenditures: The University total grew 3 percent, from \$304.1 million to \$312.3 million. Sponsored expenditures by the Academic Health Center went from \$160.0 million to \$161.6 million. The Institute of Technology's sponsored expenditures went from \$61.2 million to \$65.4 million.

Sponsored funding is money from outside the University, in return for which the University agrees to perform specific research, training, and public service. It does not include gifts or legislative appropriations. Sponsored expenditures, rather than amounts granted or obligated, are the most accurate measure of sponsored work.

UM's Rank Among U.S. Universities

R&D expenditures, 1996	9th
Federal R&D funds, 1995	9th
Patents recieved, 1996	12th
Ph.D.s awarded, 1995-96	4th

More UM performance numbers, pages 8-12

Brenner showed the Regents data regarding sponsored expenditures per faculty member and per principal investigator (data not available in *Levels and Trends*). Per investigator, the School of Public Health makes expenditures of \$300,000 to \$350,000 per year. The Medical School, IT, Dentistry, and CBS fall in the range of \$100,000 to \$200,000 per year

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 9

March 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

TA, RA, AF: standard	\$6.38/hr + 8.4%
TA, RA, AF: advanced master's or Ph.D.	\$1.12/hr + 8.4%
Summer quarter TA, RA, AF	— 8.4%
Summer session TA, with tuition	\$12.68/hr + 8.4%
Summer session TA, without tuition	— 8.4%
Professional program assistant	— 8.4%
Legal project assistant, with tuition	\$11.11/hr —
Legal project assistant, without tuition	— —
Dental fellow *	\$3.88/hr —
Medical fellow *	\$3.19/hr —

To the rates listed above, add 7.7% when a graduate student is enrolled for fewer than 4 credits, or less than 1 credit for advanced master's students and Ph.D. candidates. Also note that for summer 1998, how the new Social Security (FICA) rules apply is still unsettled.

* The additional 7.7% for Social Security and Medicare is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.19/hr + 7.7%.

For more information about GA job classes and fringe rates, see *Research Review*, June 1997, or contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/96 - 6/30/97	29.8%	27.1%	13.7%
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	28.6%	27.7%	14.5%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Grants Management Project is Reorganized

The University's Grants Management Project is now headed by David Hamilton, professor in Cell Biology and Neuroanatomy. Grants management will now be a collaborative effort of faculty governance and central administration, Hamilton told the Faculty Consultative Committee in January. He described the new arrangement as "the faculty now being in charge of its research destiny."

Hamilton serves as project director and chairs the new Grants Management Committee, which has overall responsibility for all of the policies and procedures that govern sponsored projects at the University, and for solving the University's problems with the NIH.

Previously, reform of grants management at the University was the work of several groups working somewhat independently. Now all of that work is being drawn into a tighter administrative structure, and its chair, Hamilton, reports to Senior Vice President Frank Cerra and through him to Provost Robert Bruininks and President Mark Yudof.

Most of the day-to-day work of changing grants management will now be led by Winifred A. Schumi, project manager. The committee directs several working groups responsible for the various facets of grants management reform:

- defining the roles and responsibilities of University staff, faculty, and administrators;
- streamlining central grant management processes at ORTTA and the Office of Budget and Finance;
- the Focus Grants Management Project, in which several departments are now testing new grants management tools and processes;
- training faculty and staff in grants management;
- and developing the University's new electronic tools for grants management, including the Electronic Grants Management System (EGMS), electronic financial reports via the web, and electronic routing and approval of grant proposals.

Training is of particular interest to NIH, Hamilton told the Senate Research Committee at its January meeting. The NIH demands that UM grants managers and investigators be trained in grants management. With this reorganization of the grants management project, development of training programs will be under the direction of Vice Provost Norma Allewell, and will be closely coordinated with similar training programs being developed under the Enterprise Project for student services and human resources.

Hamilton stressed that the new Grants Management Committee is a collaboration of deans, faculty, and administrators. In addition to Hamilton and Schumi, its membership includes

Mark Brenner, vice president for research;

Christine Maziar, vice president for research-designate;

Scott McConnell, professor in the College of Education and Human Development;

Burle Gengenbach, professor in Agronomy and Plant Genetics;

Fennell Evans, professor and director of the Center for Interfacial Engineering;

Gail Klatt, director of the Department of Audits;

Steve Cawley, assistant vice president in the Office of Information Technology;

Steven Crouch, the Institute of Technology's associate dean for finance and planning;

and the **soon-to-be-named** associate dean for research in the Medical School.

Ex-officio members are University Controller Terry O'Connor; Ed Wink, the interim associate vice president who leads ORTTA; Associate Vice President Robert Kvavik; Associate General Counsel Mark Bohnhorst; and Vice Provost Norma Allewell.

Good Laboratory Practice and Good Clinical Practice

April 6 & 7

Two-Day Certificate Training Programs at the Earle Brown Center, St. Paul Campus

GLP and GCP training is for faculty and staff performing FDA-regulated research. The FDA requires compliance with GCP and GLP regulations for all research submitted in support of approval of a drug or device. Most industry-sponsored research falls under these regulations.

GLP training costs \$250 per person.

GCP training costs \$300 per person.

Space is limited to 50 persons per course.

For more information, see <http://www.ahc.umn.edu/rso/GCP.html> or call Cathy Marquardt, 612/625-9624, marqu005@tc.umn.edu.

National Institutes of Health

NIH Sets New Stipends for NRSAs

NIH has set new stipends for recipients of individual or institutional National Research Service Awards (NRSAs). The new annual stipends apply to all awards made after Sept. 30, 1997, and should be used on all future applications.

The new stipends apply to NRSAs made with fiscal 1998 funds, including competing and noncompeting institutional training grants and individual fellowships, Minority Access to Research Career awards (MARC), and Career Opportunities in Research (COR) awards. Awards made between September 30 and the present will be retroactively adjusted, and the new stipends will be administratively applied to applications now in review.

The new annual stipends are as follows:

MARC & COR honors undergraduates	
freshmen & sophomores	\$6,420
juniors & seniors	\$8,988
Predoctoral	\$11,748
Postdoctoral	
no experience	\$21,000
1 years experience	\$22,176
2 years experience	\$26,160
3 years experience	\$27,492
4 years experience	\$28,824
5 years experience	\$30,144
6 years experience	\$31,476
7 years experience or more	\$33,012

National Institutes of Health

NIH will Abandon FIRST Awards, but not New Investigators

Beginning with the June 1, 1998, receipt date, the National Institutes of Health (NIH) will no longer accept applications for the First Independent Research Support and Transition Awards (R29). These awards, also known as FIRST awards, were designed for new investigators.

In making this change, NIH has *committed to supporting at least the same number of new investigators* and, as necessary, directing more resources to their support. NIH is revising application forms to allow new investigators to indicate their status and thus ensure that reviewers can clearly identify those applications. This change in policy will allow investigators maximum freedom in identifying the level and period of support needed for the work they are planning

For the January through May 1998 receipt dates for grant applications, new and amended R29 applications will be accepted, but in view of the new policy, new investigators may want to submit these applications as R01s. They can make their most informed choice by talking with program staff in the relevant institute or center.

New investigators are defined as those who have not previously served as principal investigators on any Public Health Service-supported research project other than a small grant (R03), an Academic Research Enhancement Award (R15), an exploratory/developmental grant (R21), or certain research career awards directed principally to physicians, dentists, or veterinarians at the beginning of their research careers (K01, K08, K12). Current or past recipients of Independent Scientist and other nonmentored career awards (K02, K04) *are not* considered new investigators.

For further information read the complete announcement in the November 21 *NIH Guide* (Volume 26, Number 38), or check the NIH web site at <http://www.nih.gov/grants/guide/1997/97.11.21/n1.html>. You may also feel free to contact your ORTTA grant administrator.

University Senate Wants Cost/Benefit Analysis of UM Policies

The University Senate, during its February 19 meeting, was nearly unanimous in its resolution that the University should evaluate the cost and benefit of its administrative policies that govern research.

In a vote of about 160 to 5, after discussion by only two voices—David Hamilton and Mark Yudof—the Senate resolved “that the administration undertake a systematic cost/benefits analysis of all major existing and new policies and procedures to see whether there is really any net gain from the complex regulations imposed upon the research community.”

The text of the resolution is as follows:

Whereas during the past few years the Senate Committee on Research has been asked to provide comments and make suggestions for changes to various University and Regents policies and procedures which come under its purview. The overall goal of reviewing all the policies and procedures in a systematic way to bring them into compliance with present agency requirements and other regulations as well as ultimately to simplify (and even eliminate) those policies and procedures and make them more uniform is a noble one which the committee heartily endorses.

Whereas during the course of the committee’s deliberations it has become increasingly clear that policies and procedures imposed on the University often deal with progressively finer detail and regulation. Such policies and procedures range from financial procedures to protection of human and animal subjects; the committee is concerned with the increase in regulation above and beyond the needs to meet normal fiscal, moral and ethical responsibilities in the conduct of research. The increase has come about in two ways: 1) increased regulation on the part of the federal government and its funding agencies and 2) overinterpretation of those regulations by the University in setting its own policies and procedures.

Whereas implementation of these policies and procedures exact a substantial cost on the University, both in terms of specially dedicated personnel, together with the necessary support for them, and a substantial distraction of its other personnel from their principal missions (which is another form of significant cost). Full compliance with such policies and procedures may therefore result in a counterproductive drain of resources with an incommensurately small recognizable benefit, even for those situations which the policies and procedures were designed to address. It is not at all clear that the regulations and reporting requirements actually result in a clear benefit to the University.

Therefore be it resolved that the Senate recommends that the administration undertake a systematic cost/benefits

analysis of all major existing and new policies and procedures to see whether there is really any net gain from the complex regulations imposed upon the research community. If the costs outweigh the benefits then changes in policies and procedures would be clearly called for. The Senate recognizes the complexity of this task and recommends that the first step be a realistic assessment of all the costs involved, including faculty and staff time. The benefit side of the analysis would clearly be more difficult to carry out but should estimate the value of the actual changes in outcomes produced by the University’s regulatory activities.

Be it further resolved that the Senate recommends that the President recommend to the American Association of Universities and other appropriate national organizations the urgent undertaking of a similar cost/benefit review on a national scale.

AAAS

Two UM Faculty Elected to AAAS Offices

Sally Gregory Kohlstedt, Department of Geology and Geophysics, has been elected to the Board of Directors of the American Association for the Advancement of Science. Alan Shapiro, School of Physics and Astronomy, is chair-elect of the AAAS section on history and philosophy of science. Their terms began February 18.

Responsible Management of Research

a research training workshop
open to all UM faculty

Offered by the
Office of the Vice President for Research
Thursday, March 19, 1998

1:00 to 4:30 p.m.

in the Earle Brown Center, room 62.

Space is limited.

For information or registration, please write to
RschTrng@tc.umn.edu.

Research Subjects' Protection Programs

Web Site Provides Immediate Results of Proposal Reviews

The Institutional Review Board: Human Subjects Committee (IRB) and the Institutional Animal Care and Use Committee (IACUC) have established a "project review status" site on the Research Subjects' Protection Programs web site.

The review status site will allow researchers and their staffs to check the outcome of committee review immediately following a committee meeting. Quick notice of results will give researchers more time to plan responses to committees. Note, however, that these on-web status reports are preliminary; *take no action without written notice from a committee*—which typically arrives five to seven working days following a meeting.

Getting review results via the web will relieve researchers from phoning RSPP to learn results, thus saving researchers' time and allowing RSPP to concentrate on delivering the necessary correspondence and communicating the details of committee deliberations.

Publishing review results on the web is a confidential process. Only code numbers and dates will be listed. No personal or study identifiers will be used.

The RSPP will test this project for the next several months. If researchers use it and find it helpful, we will continue. If it is not effective, we will discontinue and pursue other efficiencies which will help the research community.

If you have any suggestions for the web site or other improvements at RSPP, you may send your comments to us at IRB@umn.edu or IACUC@umn.edu.

Moira Keane, director, RSPP

The screenshot shows a Netscape browser window titled "IRB - Meeting Results - Netscape". The browser's menu bar includes "File", "Edit", "View", "Go", "Communicator", and "Help". The main content area displays the "Institutional Review Board" logo on the left and the title "IRB - Meeting Results" in the center. Below the title is the word "SAMPLE" and an "IMPORTANT NOTE" section. The note states: "This status report is considered preliminary. No action should be taken until written notice of Committee action is received --- typically five to seven working days following a Committee meeting." Below the note is a table with three columns: "CODE #", "Date Action Taken", and "Action". The table contains six rows of data. To the left of the table is a list of links: "Meeting Dates & Deadlines", "Meeting Results", "Human Subjects Guide", "Multiple Project Assurance", "Who To Contact", "Related Links", "News & Information", "RSPP Home Page", "ORTTA Home Page", "VP for Research", and "U of M Home Page". The browser's status bar at the bottom shows "Document Done".

CODE #	Date Action Taken	Action
1234M98765	January 7, 1998	Approved With Stipulations
1234M08985	January 7, 1998	Approved
1234M51248	January 7, 1998	Approved As Submitted
1234M00005	January 7, 1998	Deferred
1234S87976	January 11, 1998	Not Yet Available

To read the results of IRB or IACUC action at a given meeting, do the following:

1. Go to the RSPP web site at <http://www.research.umn.edu/subjects/>.
2. Select "Meeting Results" from the IRB menu, for human subjects research, or the IACUC menu, for animal research.
3. Locate a study code number on the chart.
4. Read across to find the date and description of committee action.

Nominations Invited for Animal Care and Research Award

The Patrick J. Manning Research Award honors two University staff or graduate students

The Patrick J. Manning award recognizes special effort in the care and use of research animals and contributions to biomedical research.

- One award goes to someone who has demonstrated outstanding effort and dedication to the daily care of research animals; and
- A second award is for someone who has made special efforts in support of the appropriate use of research animals.

Nominations are due **April 6, 1998**. Awards will be presented at the annual appreciation luncheon on May 19. Nominations should take the form of a single letter that summarizes the nominee's education, experience, and contributions to animal care and research. Up to three additional letters are optional, but allowed.

The award is a memorial to Dr. Manning, D.V.M., who directed the University's Research Animal Resources from 1974 until his death in 1994. Manning was also a professor in the Department of Laboratory Medicine and Pathology.

UM Joins Software Association

The University's Office of Patents and Technology Marketing has funded the University's membership in the Minnesota Software Association (MSA). Created in 1985, the MSA promotes the growth and vitality of Minnesota's software and information technology business community. Its members number more than 450 software, information technology, and professional service companies of all sizes. Some of the association's goals are:

- To create partnerships, share ideas, and facilitate technology transfers,
- To help Minnesota's schools create a cutting-edge software curriculum,
- To build enthusiasm for careers in information technology, and
- To create business opportunities by promoting Minnesota's information technology industry.

This MSA membership covers the entire University. Functions scheduled by MSA are often free to members. Additional information and a schedule of events may be found at the association's web site at www.msa.org.

Contact Jim Hildebrand, jim-h@ortta.umn.edu, regarding University developed software you desire to license.

Letters of nomination must describe and document the nominee's contributions. The award consists of an honorarium and a plaque. The award is not intended for faculty or established investigators.

The kinds of accomplishments the award seeks to honor include, for example, 1) Refinement of research techniques so that they use fewer animals, or are less invasive or less stressful; 2) Training efforts to improve animal welfare and biomedical research; 3) Outstanding efforts in the observation, daily care, and health care of research animals; and 4) Significant efforts to educate the public about the essential role animals play in research.

Please mail nominations to Greg Steinhagen, chair of the selection committee, Box 69, Mayo Bldg.; or deliver them to Research Animal Resources, 1-525 Phillips-Wangensteen Bldg.

Please Nominate New Regents' Professor by April 1

President Yudof, in a January 16 memo to faculty, invited nominations for a new Regents' Professor at the University. Nominations are due April 1. Created by the Board of Regents, Regents' Professorships are the University's highest honor for faculty. The professorships include a stipend, supplied by the University Foundation, of \$10,000 per year.

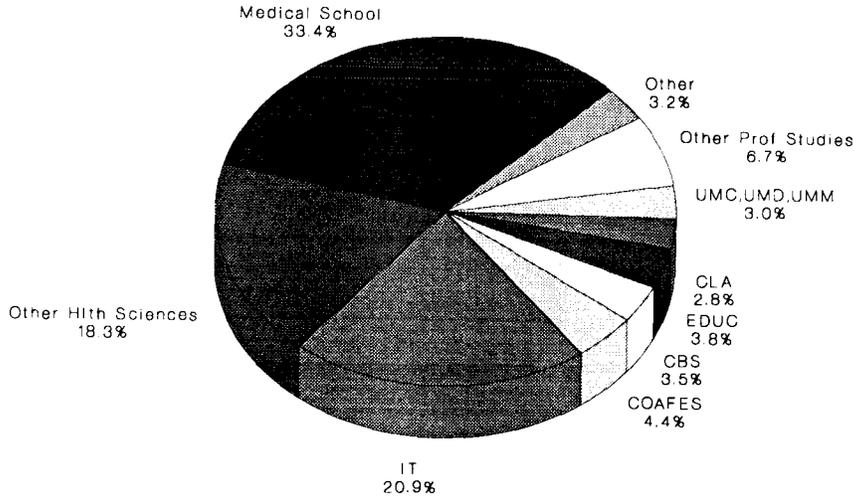
Nominations consist of a letter, five pages maximum, that summarizes the nominee's accomplishments and their local, national, and global impact. Nominations also include a curriculum vitae and up to 10 supporting letters. It is not appropriate for faculty to nominate themselves.

The nomination should describe scholarly, creative, or artistic achievement; accomplishment as an advisor and teacher; and professionally related service inside and outside the University. Letters from scholarly peers and students are encouraged. Supporting letters should be accompanied by brief descriptions of the authors' qualifications.

Please send 10 copies of a nomination to President Yudof's office, 202 Morrill Hall. The President will transmit them to the nominating committee. The committee will make a recommendation to the President, who will then make a recommendation to the Board of Regents for their June 1998 meeting.

Once the process is complete, nomination files will be shredded.

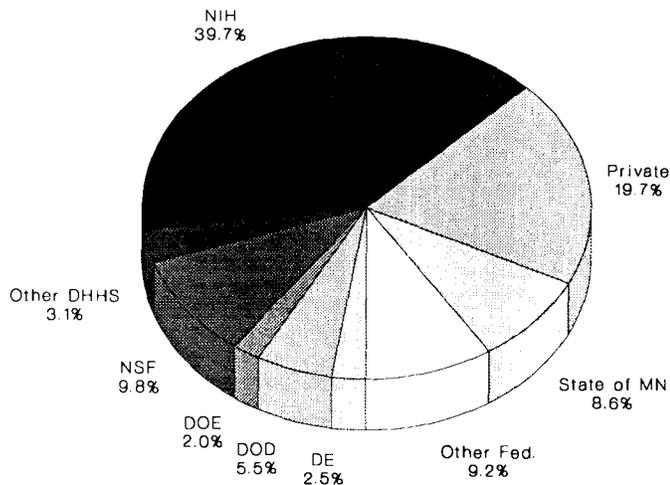
U of M sponsored expenditures, fiscal 1997



by college

Medical School	\$104.3 million
Other health sciences	57.3
Institute of Technology (IT)	65.4
College of Liberal Arts (CLA)	8.7
College of Biological Sciences (CBS)	11.0
College of Agricultural, Food, and Environmental Sciences (COAFES)	13.7
College of Education and Human Development (EDUC)	11.8
Other professional studies	20.9
Coordinate campuses	9.4
Other	9.7

Total \$312.3 million



by funding agency

National Institutes of Health (NIH)	\$124.1 million
Other Health and Human Services (DHHS)	9.6
National Science Foundation (NSF)	30.5
U.S. Department of Energy (DOE)	6.3
U.S. Department of Defense (DOD)	17.1
U.S. Department of Education (DE)	7.7
Other federal agencies	28.7
State and local government	26.8
Private funds	61.5

Total \$312.3 million

per principal investigator. Such figures, Brenner said, allow for more meaningful comparisons among UM colleges and among U.S. universities.

On the whole, the University's major sponsors provided the same proportions of funding in fiscal 1997 as in 1996: The NIH provided 40 percent of the University's sponsored funding; NSF provided 10 percent; and other federal sources provided 22 percent. The remainder came from state and local government, 9 percent; and from private sources, including industry, foundations, and associations, 20 percent.

Among U.S. universities, the University of Minnesota ranks 11th with regard to sponsored funding from industry, Brenner reported, then he commented that "down the road we're probably going to slip by one or two notches because we have not grown at the rate of other institutions."

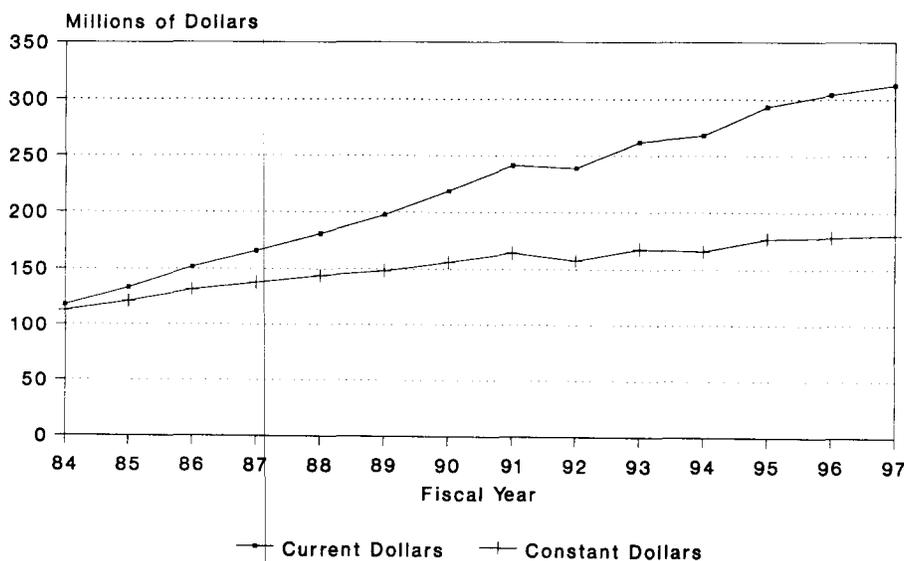
This year, for the first time, *Levels and Trends* includes data regarding indirect cost expenditures—the money that sponsors provide to cover general University overhead costs for sponsored work. In total, sponsors provided the University with \$54.4 million for indirect costs. College-level subtotals range from \$22.2 million for the Medical School to \$4,669 for Architecture and Landscape Architecture.

Royalties from technology transfer agreements brought the University \$4.9 million in fiscal '97, Brenner reported. That's down from \$6.3 million in

(continued on page 10)

U of M Indirect Cost Expenditures Fiscal 1997

Agricultural, Food, & Environmental Sci.	\$ 911,648
Architecture & Landscape Architecture	4,669
Biological Sciences	2,206,443
Carlson School of Management	114,982
Crookston	2,575
Dentistry	942,067
Duluth Medicine	444,588
Duluth, except Medicine	833,495
Education & Human Development	1,633,083
Experiment Station & Extension Service	64,951
General College	75,276
Human Ecology	271,093
Humphrey Institute	272,801
Institute of Technology	12,377,975
Law School	14,844
Liberal Arts	1,704,913
Medical School	22,247,442
Morris	6,804
Natural Resources	389,966
Nursing	293,474
Other Academic Health Center	24,185
Other misc.	226,927
Pharmacy	830,517
Public Health	7,016,786
University College	6,405
University Libraries	19,043
Veterinary Medicine	805,552
Vice President for Research	701,313
Total	\$54,443,817



U of M
Sponsored Expenditures
14-year trend

Source of data, pp. 8 & 9: *Levels and Trends in Sponsored Programs at the University of Minnesota Fiscal Year 1997*.

**R&D Expenditures
in Science & Engineering**

Top Ten U.S. Universities, Fiscal 1996

Johns Hopkins	\$798,000,000
Univ. of Michigan	\$469,000,000
Univ. of Wisconsin, Madison	\$413,000,000
Univ. of Washington	\$406,000,000
MIT	\$381,000,000
Univ. of California, San Diego	\$371,000,000
Texas A&M	\$367,000,000
UCLA	\$355,000,000
<i>University of Minnesota</i>	<i>\$341,000,000</i>
Cornell	\$339,000,000

**Federal Obligations
for Science & Engineering**

Top Ten U.S. Universities, Fiscal 1995

Johns Hopkins	\$729,177,000
Univ. of Washington	\$339,521,000
MIT	\$306,765,000
Stanford	\$298,139,000
Univ. of Michigan	\$268,126,000
Univ. of California, San Diego	\$255,851,000
Univ. of Wisconsin, Madison	\$241,513,000
Cornell	\$240,734,000
<i>University of Minnesota</i>	<i>\$230,720,000</i>
UCLA	\$229,693,000

source: NSF

Annual Report

(continued from page 8)

1996, but still considerably more than any other year—up through 1995 royalties never reached \$2 million per year. Brenner also stated that, with regard to royalties, “we have reason for optimism, because of new technologies going forward.”

Along with statistics, Brenner described to the Regents some examples of the University’s recent successes.

A transposon discovered here, the so-called “Sleeping Beauty,” opens the door for molecular transformation of vertebrate tissue.

The transgenic mouse that displays Alzheimer’s disease and can be used to test drugs has led to a three-year licensing agreement with Mayo Clinic and others that will bring \$900,000 to the University over three years.

A company has been formed to develop the “digital watermark” invented at the University; it provides tamper-proof signatures on digital files.

Brenner also spoke proudly of the University providing seed funding for interdisciplinary work by teams of its faculty. As a result, the University is now a national leader in

(next page)

Number of Patents Issued

Top 20 U.S. Universities, Fiscal 1996

Univ. of California system	159
MIT	113
Stanford	56
Univ. of Wisconsin, Madison	47
Univ. of Pennsylvania	46
Iowa State	46
Cornell	46
SUNY	45
Michigan State	40
Univ. of Florida	34
California Institute of Technology	31
<i>University of Minnesota</i>	29
Virginia Tech.	29
Harvard	28
Penn. State	27
Univ. of Texas, Austin	26
Georgia Institute of Technology	25
Johns Hopkins	24
Univ. of Colorado	24
Univ. of Michigan	20

source: Association of University
Technology Managers (AUTM)

Number of Doctorates Awarded

Top 20 U.S. Universities, Academic 1995-'96

Univ. of California, Berkeley	768
Univ. of Wisconsin, Madison	752
Univ. of Texas, Austin	744
University of Minnesota, Twin Cities	724
Ohio State	708
Univ. of Illinois, Urbana-Champaign	699
Univ. of Michigan	685
UCLA	606
Texas A&M	569
Stanford	565
Cornell	559
MIT	553
Harvard	527
Penn. State	527
Purdue	507
Univ. of Washington	495
Michigan State	479
Univ. of Maryland, College Park	463
Univ. of Pennsylvania	452
USC	445
Columbia	429

source: NSF

the field of political psychology, he said; the Center for Girls and Women in Sports has attracted wide national interest; and the Center for Integrated Agriculture and Natural Resources Management is linking University expertise with outside groups in pursuit of integrated land-use throughout Minnesota.

To respond to the NIH and improve grants management, the University will clarify the roles and responsibilities of upper-level administration by the end of spring, Brenner reported. NIH may return the University's "expanded authority" to spend NIH funds, while continuing to designate UM an "exceptional institution" that needs extra NIH oversight.

Training of faculty and staff in grants management has nearly completed "phase one," said Brenner. Trainers have now started to produce electronic tutorials on the web that will provide in-depth training at the user's convenience. Two such tutorials are complete, one for informed consent and another for effort certification. Other institutions in the Committee on Institutional Cooperation are joining the effort so that they can share the expense and the products.

by Phil Norcross

Overhead Rates for Federally-Funded R&D Selected Universities, Fiscal 1997

Georgia Institute of Technology	46.3 %
Indiana Univ.	50.0
Iowa State	44.0
Johns Hopkins	68.0
Michigan State	47.0
MIT	59.0
Ohio State	46.0
Oregon Health Sciences Univ.	48.0
Penn. State	41.7
Purdue	52.0
Stanford	56.0
Univ. of Arizona	51.5
Univ. of California, Berkeley	49.9
Univ. of California, Davis	44.5
Univ. of Colorado	44.6
Univ. of Illinois, Chicago	52.4
Univ. of Illinois, Urbana-Champaign	55.5
Univ. of Iowa	47.0
Univ. of Kansas Medical Center	50.0
Univ. of Michigan	52.5
University of Minnesota	47.0
Univ. of North Carolina, Chapel Hill	44.5
Univ. of Texas, Austin	51.0
Univ. of Texas Health Sci., San Antonio	45.0
Univ. of Texas Medical, Dallas	55.0
Univ. of Utah	49.5
Univ. of Washington	48.5
Univ. of Wisconsin, Madison	44.0
Wisconsin, Medical College of	50.0

source: Office of Naval Research, and Department of Health and Human Services, as reported in the *Chronicle of Higher Education*, 23 Jan. 1998, p. A31.

Expenditures for Research & Development By State, Fiscal 1995

College & University R&D Top 22 States

California	\$2,594,280
New York	1,702,414
Texas	1,472,165
Maryland	1,159,866
Massachusetts	1,147,150
Pennsylvania	1,139,531
Illinois	817,640
Michigan	755,089
North Carolina	686,609
Georgia	657,530
Ohio	642,596
Florida	559,104
Washington	485,970
Wisconsin	472,982
Virginia	446,776
New Jersey	443,371
Missouri	397,192
Colorado	393,809
Arizona	380,216
Connecticut	377,225
Indiana	375,719
Minnesota	336,524

Industry R&D Top 14 States

California	\$28,710,000
Michigan	12,388,000
New York	8,651,000
New Jersey	8,200,000
Massachusetts	7,416,000
Texas	6,211,000
Illinois	5,776,000
Pennsylvania	5,331,000
Washington	4,294,000
Florida	4,101,000
Ohio	4,001,000
Connecticut	3,906,000
Indiana	2,721,000
Minnesota	2,636,000

Total R&D Top 19 States

California	\$36,132,656
Michigan	13,274,875
New York	10,954,468
Massachusetts	9,969,452
New Jersey	9,127,706
Texas	8,385,028
Illinois	7,486,667
Pennsylvania	6,919,124
Maryland	6,518,849
Ohio	5,314,155
Washington	5,240,679
Florida	5,223,199
Connecticut	4,310,652
Virginia	3,897,253
New Mexico	3,295,475
North Carolina	3,191,499
Indiana	3,162,633
Washington, D.C.	3,128,056
Minnesota	3,086,938

Source: NSF, National Patterns of R&D Resources: 1997 Data Update (<http://www.nsf.gov/sbe/srs/natpat97/start.htm#tables>)

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

Haji, I. *Appraisability: Puzzles, Proposals, and Perplexities*. New York: Oxford University Press, 1998.

Barrett, J., McCoy, C., Veblen, K. *Sound Ways of Knowing: Music in the Interdisciplinary Curriculum*. New York: Schirmer, 1997.

McCoy, C.W. Factors relating to pitch-matching skills of elementary education majors. *Journal of Research in Music Education* 45 (1997): 356-366.

Thurlow, M., Elliott, J., Ysseldyke, J. *Testing Students with Disabilities: Practical Strategies for Complying with District and State Requirements*. Thousand Oaks, Calif.: Corwin, 1997.

Lambrech, J.J., Hopkins, C., Moss, J., Finch, C.R. *Importance of On-the-Job Experiences in Developing Leadership Capabilities*. Berkeley: University of California, 1997.

Lewis, T. Towards a liberal vocational education. *Journal of Philosophy of Education* 31.3 (1997): 477-489.

Lewis, T. America's choice: literacy or productivity. *Curriculum Inquiry* 27.4 (1997): 391-421.

Lewis, T. An investigation of the instructional thoughts, beliefs, and preferences of selected HRD practitioners. *Journal of Industrial Teacher Education* 35.2 (1998): 6-28.

Larson, R.B. Encouraging marketing research. *Journal of Extension* 35.6 (Dec. 1997): 7 pp.

Bird, S.E. The tales we tell: folk legends of Minnesota. *CURA Reporter* 28.1 (Feb. 1998): 8-12.

Wasburn, P.C., Burke, B.R. The symbolic construction of Russia and the United States on Russian national television. *Sociological Quarterly* 38.4 (1997): 669-686.

Ahlburg, D.A. *Characteristics of Poverty: Incidence, Change, and Correlates*. Minneapolis: UM Center for Urban and Regional Affairs, 1997.

Wattenberg, E., Pearson, Y. *Rethinking Child Welfare: Can the System be Transformed through Community Partnerships*. Minneapolis: UM Center for Urban and Regional Affairs, 1997.

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More Information

To receive copies of NIH and NSF application kits, please call 612/624-7021, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ Various NIH Institutes

Management of Symptoms at the End of Life

The National Cancer Institute, the National Institute of Nursing Research, the National Institute of Allergy and Infectious Diseases, the National Institute of Mental Health, and the Office of Alternative Medicine are requesting research grant applications concerning the clinical management of symptoms and syndromes that are associated with life-limiting illness, such as pain, dyspnea, delirium, cachexia, nausea, fatigue, and depression. The purpose is to stimulate research that will lead to improved quality of life for those at the end of life and decreased distress for their caregivers.

There is widespread dissatisfaction in the U.S. with care at the end of life. A recent investigation documented many problems with the delivery of palliative care. Forty percent of the dying patients studied were treated aggressively in intensive care units; pain was common; there were discrepancies between patient desires and actual treatment; and almost half of the physicians in the study did not know that their patients' preferences were not to be resuscitated. Broad public interest in and support for physician-assisted suicide is widely viewed as another indicator of major public dissatisfaction with treatment of the terminally ill. The need for action on the part of clinicians, educators, researchers, policy makers, and the public is recognized.

Under this initiative the specific areas of interest include, but are not limited to, the following topics:

1. Studies comparing the incidence and combinations of symptoms that are experienced at the end of life in specific populations, such as persons with cancer, AIDS, end-stage heart disease, etc.
2. Research on the mechanisms and interactions of these symptoms, including biochemical, neurological, endocrine, and immune approaches.

{next column}

3. Studies of the efficacy of combination therapies to address clusters of symptoms with multiple determinants.
4. Small-scale studies to develop and test instruments that are sensitive to the distress associated with symptoms at the end of life and useful for monitoring the effectiveness of interventions, especially for culturally diverse populations and disadvantaged groups.
5. Research on the impact of depression and anxiety and of their treatment on patient status and management at the end of life.
6. Research on the ethical issues associated with research at the end of life, including the needs and expectations of dying persons and their families.

This is an ongoing program with annual application deadlines of **February 1**, **June 1**, and **October 1**. A copy of the announcement may be accessed at <http://www.nih.gov/grants/guide/pa-files/PA-98-019.html>. Contact personnel are listed in the announcement.

■ DHHS - Administration on Aging

National Center on Elder Abuse (AoA-98-2)

The Administration on Aging (AoA) announces that it will hold a cooperative agreement/grant award competition under this program announcement for a National Center on Elder Abuse.

Public and/or private nonprofit agencies, organizations, and institutions are eligible to apply. To be considered for funding, however, applicants must demonstrate a proven track record of expert knowledge concerning the operation and organization of elder abuse programs at national, state, and local levels, as well as the requisite organizational capacity to carry out the activities of the center on a national scale.

The application deadline is **April 20, 1998**. Application kits are available by writing to the Department of Health and Human Services, Administration on Aging, Officer of Elder Rights Protection, 330 Independence Avenue SW, Room 4254, Washington, DC 20201; or by calling Jeanette C. Takamura at 202/619-2044.

■ University of Minnesota Center for Urban and Regional Affairs

The Center for Urban and Regional Affairs (CURA) invites proposals for its program supporting interactive research between University of Minnesota faculty and the Minnesota community. The purpose of the program is to encourage University faculty to carry out research projects that involve significant issues of public policy for the state or its communities and include interaction with groups, agencies, or organizations in Minnesota. *Ideal projects will have an applied orientation as well as serve the basic research interests of the faculty member.*

Research projects should focus on Minnesota issues and concerns and be related to one of the following substantive topics: communities of color, the criminal justice system, state or local economic issues, education, employment, energy, environment, housing, state and local government, poverty/welfare, human and social services, or transportation.

The following are projects that have been supported in the past and the departments of the faculty conducting the projects: Education of Homeless Children, Institute of Child Development; Wild Rice Production Impacts on Water Quality, Agricultural Management, UMC; Restorative Justice Juvenile Programs in Dakota and Washington Counties, Social Work; Management of Hennepin County Probation/Parole, Operations and Management Science; Surface and Ground Water Interaction, Civil Engineering.

Regular faculty members on nine-month ("B") appointments are especially invited to apply. Three or four projects will be funded for 1998-99. Each will provide support for two months of the faculty member's time in the summer of 1998 and a half-time graduate research assistant for the summer of 1998 and the 1998-99 academic year. Where appropriate, limited support for miscellaneous research expenses can be provided.

Applications must be received in the CURA office by 4:30 p.m., Monday, **March 30, 1998**. For further information call 612/625-1551, fax 612/626-0273, cura@tc.umn.edu, <http://www.umn.edu/cura>.

■ University of Minnesota Minnesota Obesity Center: Pilot and Feasibility Program

The Minnesota Obesity Center is requesting grant proposals for the 1998 Pilot and Feasibility Program. The goal is to provide seed money to attract new investigators, both junior or established, into the study of obesity.

Two applications will be funded at a maximum of \$20,000 per year for two years. Junior investigators beginning their research careers focusing on obesity, or senior investigators for whom obesity research is a change of direction, are eligible to apply.

Recipients will have access to additional technical support through the Core System of the Minnesota Obesity Center. The four research cores are 1) the basic mechanisms core, 2) the clinical populations/assessment core, 3) the epidemiology and intervention core, and 4) the human metabolic studies core.

Examples of services provided include DNA sequencing at minimal cost; access to the Eating Disorders Research Clinic; services provided by the Data Collection and Services Center, the Nutrition Coordinating Center, and the Laboratory of Physical Hygiene; and state-of-the-art methods for studying energy metabolism and nutrient partitioning at the whole-body-level in humans.

Interested investigators are asked to submit a single page letter of intent by **April 1, 1998**. This letter should include a statement of the hypothesis, a paragraph of background information, a description of the experimental design, and a summary of the proposed methods. From these letters, five applicants will be selected to submit a full proposal.

Full proposals will be due **July 1, 1998**. Letters of intent should be mailed to, and further information may be obtained from, Kate Welch, Program Coordinator, Minnesota Obesity Center, 1 Veterans Drive (#151), Minneapolis, MN 55417-2399; 612/727-5698, welch012@maroon.tc.umn.edu.

■ Various Federal Sponsors

Mentored Scientist Development Award in Research Ethics — PA-98-006

The National Institutes of Health, the Centers for Disease Control, the Health Resources and Services Administration, and the Agency for Health Care Policy and Research invite biomedical, behavioral, and public health researchers to apply for the Mentored Scientist Development Award (MSDA). The MSDA will support training in research ethics for health professionals working at academic and other health-related institutions, particularly research involving human participants.

The goals of the MSDA are to 1) enhance the career of the candidate such that he/she would become an independent investigator in applied research ethics, and 2) ensure that the candidate would become a resource in research ethics for the sponsoring institution and its scientific community. The award is designed for investigators who would refocus their research careers to the field of applied research ethics.

The candidate must identify a mentor with extensive research and academic experience in ethical issues related to biomedical research and must be willing to commit a minimum of 75 percent time of professional effort to conducting research and pursuing research career development activities for the period of the award.

Applications should be submitted by the candidate directly and should include a letter of commitment from the proposed institution. Applicants may be members of domestic, nonfederal, public or private organizations, such as medical, dental, public health, or nursing schools, or other institutions of higher education. Minorities, women, and individuals with disabilities are encouraged to apply. Current principal investigators of research grants from NIH or any of the other sponsored agencies *are not* eligible.

An optional, nonbinding letter of intent is requested by **May 22, 1998**. The letter should include a descriptive title of the proposed research; the name, address, and telephone number of the principal investigator; the identities of other key personnel; and the number and title of the announcement in response to which the application is being submitted (Mentored Scientist Development Award in Research Ethics, PA-98-006). Letters should be sent to the individual listed below.

Full applications must be submitted by **June 24, 1998**. For further information contact Milton J. Hernandez, Ph.D., Division of Extramural Activities, NIAID, 6003 Executive Boulevard Room 3C21, Bethesda, MD 20892-7640; 301/496-3775, fax 301/402-0369, mh35c@nih.gov.

■ Various Federal Sponsors

Short-Term Courses in Research Ethics

The National Institutes of Health, the Centers for Disease Control, the Health Resources and Services Administration, and the Agency for Health Care Policy and Research invite applications for grants to develop, conduct, and evaluate short-term courses on ethical issues in research, particularly those involving human participants. Courses should improve the skills of biomedical, behavioral, social science, and public health researchers in identifying and addressing the ethical, legal, and social implications of their research.

Grantees may develop, offer, and/or evaluate research ethics courses ranging from three days to six weeks in duration. For organizations wanting to teach research ethics courses, such courses should be offered at least once a year. Alternatively, courses could be developed that would be made available on the Internet, on video, or in another distance-learning format.

The mechanism of support is the Continuing Education Training Grant (T15). Applicants may request up to three years of support. Allowable costs include personnel, supplies, travel, and per diem for faculty, and other costs, such as printing, telephone, audio-visuals, postage, recruitment materials, and computer software. In addition, travel and per diem funds for students attending courses are appropriate when necessary. It is expected that courses will be partially supported through registration fees paid for by the attendees. The indirect cost rate for T15 awards is eight percent.

Students may be recruited locally, regionally, or nationally. Grantees should address plans to include participants from groups currently underrepresented in the field of research ethics.

An optional, nonbinding letter of intent is requested by **May 22, 1998**. The letter should include a descriptive title of the proposed research; the name, address, and telephone number of the principal investigator; the identities of other key personnel; and the number and title of the announcement in response to which the application is being submitted (Short-Term Courses in Research Ethics, PA-98-005). Letters should be sent to the individual listed below.

Full applications must be submitted by **June 24, 1998**. For further information contact Milton J. Hernandez, Ph.D., Division of Extramural Activities, NIAID, 6003 Executive Boulevard Room 3C21, Bethesda, MD 20892-7640; 301/496-3775, fax 301/402-0369, mh35c@nih.gov.

■ NASA Research Opportunities in Space Science

The National Aeronautics and Space Administration (NASA) has released a broad agency announcement entitled Research Opportunities in Space Science-1998. This NASA Research Announcement (NRA) solicits proposals for supporting research, analysis, and technology across a broad range of program elements relevant to the four defined OSS science themes 1) Astronomical Search for Origins, 2) Solar System Exploration, 3) Structure and Evolution of the Universe, and 4) The Sun-Earth Connection. Proposals for twenty-three different science programs are requested, with proposal due dates staggered throughout 1998.

The earliest due date is **May 4, 1998**, and the latest is **August 31, 1998**. A notice of intent to propose is requested for all program elements. The NRA may be accessed at <http://www.hq.nasa.gov/office/oss/>. Questions concerning general NRA policy issues may be directed to Dr. J. David Bohlin, Research Program Management Division, Code SR, Office of Space Science, NASA Headquarters, Washington, DC 20546-0001; 202/358-0880, david.bohlin@hq.nasa.gov. Refer to NRA 98-OSS-03.

■ Association of American Colleges and Universities Program for Health and Higher Education

Grants are being offered by the Association of American Colleges and Universities through its Program for Health and Higher Education. Projects will be funded to help improve education on issues of HIV and health.

Proposals are due **March 31, 1998**. For applications, download copies from the web site at <http://www.aacu-edu.org>. Follow the links to Partnerships in Health and Higher Education. You may also e-mail a request to knich@aacu.nw.dc.us.

■ Department of Justice Office of Justice Programs

The Office of Justice Programs (OJP) has released the OJP Program Plan for FY 1998, available both on the Internet and in hard copy. The Program Plan details the various programs that OJP funds and supports. For a copy, go to the website at <http://www.ojp.usdoj.gov/Plan>. Printed copies may be obtained by writing to the Office of Congressional and Public Affairs, 810 7th Street NW, Washington, DC 20531; 202/307-0703, fax 202/514-5958.

■ American Cancer Society Institutional Research Grant

The American Cancer Society (ACS), through the University Dean's 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 individual grants is to provide "seed" money to permit the initiation of promising new projects or novel ideas by junior faculty investigators.

The amount of the individual award is \$20,000 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 or have a current competitive national research grant.

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 for potential or actual oncogenic events in prokaryotic or eukaryotic cells.

The application deadline is **April 1, 1998**. Instructions and application forms are available from the Pediatric BMT Office, Room 460, Cancer Center Research Building, 612/626-1926.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1998	436	\$118,578,518
Awards Processed		
January 1998	185	23,824,833
Proposals Submitted		
July 1997 - January 1998	2,325	455,422,995
Awards Processed		
July 1997 - January 1998	1,730	197,046,703
Proposals Submitted		
July 1996 - January 1997	2,263	335,117,153
Awards Processed		
July 1996 - January 1997	1,695	186,204,247

Structural Studies of Actin

Edward Egelman, Cell Biology and Neuroanatomy

NIH, NIAMS

\$193,707 - 12/26/97-11/30/98

Functional Analysis of a Viral dsRNA-Binding Protein

Leslie A. Schiff, Microbiology

American Cancer Society, Inc.

\$100,000 - 1/1/98-12/31/98

Inhibition of Ovarian and Breast Cancers by Anti-Vascular Endothelial Growth Factor (VEGF) Antibodies

S. Ramakrishnan, Pharmacology

Gustavus and Louise Pfeiffer Research Foundation

\$49,205 - 1/1/98-12/31/98

Thyroid Hormone and Neural Development

Apostolos P. Georgopoulos, Physiology

Minnesota Medical Foundation

\$6,000 - 1/1/98-12/31/98

Adult AIDS Clinical Trials Unit

Henry H. Balfour, Jr., Laboratory Medicine and Pathology

Timothy W. Schacker, Medicine

Courtney Fletcher, Pharmacy

NIH, NIAID

\$1,561,372 - 1/1/98-12/31/98

Liver Transplantation: Models for Patient Management

Cynthia Gross, Pharmacy

Mayo Foundation

\$5,711 - 12/16/96-11/30/97

Collaborative Studies on the Genetics of Asthma

Malcolm Blumenthal, Medicine

Richard A. King, Medicine

Andreas Rosenberg, Laboratory Medicine and Pathology

NIH, NHLBI

\$615,495 - 9/1/97-8/31/98

Immunology and Molecular Virology of Acute HIV

Infection

Timothy W. Schacker, Medicine

Fred Hutchinson Cancer Research Center

\$105,685 - 7/1/97-6/30/98

Inhalational IL-2 Liposomes

Keith Skubitz, Medicine

Cancer Treatment Research Foundation

\$41,909 - 1/1/98-12/31/98

To Assess the Comparative Effect of Angiotensin II Receptor

Kenneth McDonald, Medicine

Astra Merck, Inc.

\$75,000 - 7/15/97-7/14/98

Interleukin-1 Receptor Antagonist (IL-1ra) for the Prevention of GVHD

Daniel J. Weisdorf, Medicine

Dana-Farber Cancer Institute

\$56,610 - 9/30/97-9/29/98

Stem Cell Transplant as a Therapy for Autoimmune Arthritis

Ronald P. Messner, Medicine

Patricia E. Tam, Medicine

Arthritis Foundation, Minnesota Chapter

\$19,719 - 1/1/98-12/31/98

Stem Cell Transplant as Therapy for Autoimmune Arthritis

Ronald P. Messner, Medicine

Patricia E. Tam, Medicine

Lupus Foundation of America, Inc., Minnesota Chapter

\$15,000 - 1/1/98-12/31/98

Skin Biopsy to Assess the Effect of a Protacyclin Derivative

William R. Kennedy, Neurology

Toray, Inc.

\$432,000 - 3/1/97-2/28/99

Regulation of Calcium Ions in Retinal Muller Cells

Susan A. Keirstead, Ophthalmology

NIH, NEI

\$116,883 - 1/1/98-12/31/98

Renin-Angiotensin Inhibition and Early Diabetic Nephropathy

S. Michael Mauer, Pediatrics

Alan Sinaiko, Pediatrics

Keith Drummond, Pediatrics

Merck

\$1,665,000 - 3/1/97-2/28/01

Prevention of Insulin Dependent Diabetes Mellitus

David M. Brown, Pediatrics

Joslin Diabetes Center

\$118,321 - 9/1/97-8/31/98

Screening for Neuroblastoma in Infants

Mendel Tuchman, Pediatrics

Richland Memorial Hospital

\$50,195 - 9/16/97-9/15/98

Effects of Elevated Workstates and Exogenous Carbon

Substrates on Myocardial Bioenergetics and NMR

Spectroscopy

Yi Zhang, Radiology

Kamil Ugurbil, Radiology

American Heart Association, Minnesota Affiliate

\$24,000 - 7/1/97-6/30/98

Polyurethane Calcification, Mechanism and Inhibition

Richard W. Bianco, Surgery

Children's Hospital, Philadelphia

\$94,173 - 8/26/97-7/31/98

Immune Parameters Associated with Long-Term Graft Success

Arthur Matas, Surgery

Duke University

\$28,341 - 9/30/97-9/29/98

Peptide Dynamics Investigated by ¹³C and ¹⁵N-NMR Relaxation

Kevin Mayo, Center for Biomedical Engineering
Vladimir Daragan, Biochemistry, Medical School
National Science Foundation
\$105,000 - 1/1/98-12/31/98

Adolescent Health Training Program

Robert W. Blum, Public Health
HRSA, Maternal and Child Health
\$320,796 - 7/1/97-6/30/98

Access Outcomes in People with Diabetes and Asthma

Nicole Lurie, Health Services Research
Commonwealth Fund
\$50,000 - 12/1/97-4/1/98

Adolescent Smoking Cessation in Dental Practices

Harry A. Lando, Epidemiology
NIH, NIDR
\$354,997 - 1/1/98-12/31/98

Alcohol Surveillance System

Alexander C. Wagenaar, Epidemiology
University of Illinois, Chicago
\$194,620 - 11/1/97-10/31/98

Development of Health Status Instruments for Clinical Trials

Thomas Choi, Health Services Research
Data Intelligence Consultants
\$8,480 - 12/15/97-3/15/98

Improvements in Perineural Local Anesthetic Block

David B. Masters, Pharmacy
Mayo Foundation
\$89,117 - 7/4/97-2/28/98

Lesbian and Gay Community Funding Partnership

Amos S. Deinard, Community University Health Care Center
Minneapolis Foundation
\$8,410 - 1/1/98-12/31/98

Bridge to Health Tobacco Evaluation

Derryl Block, Nursing
Allina Foundation
\$1,000 - 1/1/98-2/1/98

Evaluation of the Dakota County Healthy Families Project

Lavohn Josten, Nursing
Carol Skay, Nursing
Dawn Reckinger, Nursing
Dakota County
\$23,008 - 05/01/97-12/31/97

Evaluation of Sym-2081 for Reducing Hyperalgesia in Rat Model

Keith C. Kajander, Oral Sciences
American Academy of Orofacial Pain
\$1,000 - 04/01/97-06/30/98

Regional Mechanics of Injured Lungs

Theodore A. Wilson, Aerospace Engineering and Mechanics
Mayo Clinic
\$20,787 - 7/1/97-6/30/98

Heavy Element Abundances: Clues to the Evolution of Star-Forming Galaxies

Donald R. Garnett, Astronomy
National Aeronautics and Space Administration
\$108,376 - 11/1/97-10/31/98

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
\$201,083 - 8/22/97-8/21/98

Protective Coatings for Fused Quartz

Lorraine Francis, Chemical Engineering and Materials Science
Fusion Lighting, Inc.
\$172,799 - 1/1/98-12/31/00

Techniques Required for Studying Films and Coatings

William W. Gerberich, Chemical Engineering and Materials Science
Sandia National Laboratories
\$19,705 - 1/5/98-5/1/98

Improved Handles for Solid-Phase Peptide Synthesis

George Barany, Chemistry
NIH, NIGMS
\$249,236 - 1/1/98-12/31/98

Applying Software Engineering Methodologies to Robotic Tasks

Mats Heimdahl, Computer Science and Engineering
N. Papanikolopoulos, Computer Science and Engineering
Daniel L. Boley, Computer Science and Engineering
National Science Foundation
\$64,011 - 12/1/97-11/30/98

Concurrent Object-Oriented Models for Real-Time Testing

Wei-Tek Tsai, Computer Science and Engineering
CPI/Guidant Corp.
\$30,000 - 1/1/98-6/30/98

Distributed Systems for Problems in Robust Control and Visual Tracking

Allen Tannenbaum, Electrical Engineering
USDoD, Air Force
\$28,896 - 1/1/98-9/30/00

Patagonia Lake Drilling Project (Phase I)

Kerry Kelts, Geology and Geophysics
University of Colorado
\$143,872 - 9/1/97-8/31/99

Collaborative Research: Magma Rheology, Mixing of Rheological Fluids, Molecular Dynamics Simulation, and Lithospheric Dynamics

David A. Yuen, Geology and Geophysics
U.S. Department of Energy
\$91,129 - 11/15/97-11/14/98

Integrated, Predictive Fluvial Architecture Studies in the Golfo de San Jorge Basin, Argentina

Chris Paola, Geology and Geophysics
Mark Person, Geology and Geophysics
University of Wyoming
\$68,211 - 7/1/97-6/30/98

Center for Filtration Research

Benjamin Y. Liu, Mechanical Engineering
David Y. Pui, Mechanical Engineering
3M
\$90,000 - 1/1/98-12/31/00

Measurements in Transitional Boundary Layers

Terrence W. Simon, Mechanical Engineering
National Aeronautics and Space Administration
\$56,000 - 12/1/97-11/30/98

Combinatorial Biosynthesis: A New Technology for the Production of Novel Polyhydroxyalkanoate Biopolymers

David Sherman, Biological Process Technology Institute
USDoD, Office of Naval Research
\$300,000 - 11/15/97-9/15/00

Development of Technologies for Combinatorial Biology

David Sherman, Biological Process Technology Institute
ChromaXome Corporation
\$48,000 - 4/15/97-3/15/98

Engineering Novel Monomer Syntheses for Polyhydroxyalkanoate Copolymers
David Sherman, Biological Process Technology Institute
Procter & Gamble Co.
\$56,275 - 2/15/98-1/15/99

Unrestricted Grant for Investigation of *Streptomyces* Molecular Genetics
David Sherman, Biological Process Technology Institute
Abbott Laboratories
\$10,000 - 1/15/98-1/15/99

Comprehensive Numerical Simulation of Sheet Cavitation and Cloud Cavitation
Charles C. S. Song, St. Anthony Falls Laboratory
USDOD-Navy
\$50,000 - 11/1/97-10/31/99

Adopting Food-Production in Mid-Holocene Arabia
Joy McCarriston, Anthropology
National Science Foundation
\$19,979 - 12/1/97-11/30/98

Advanced Information Science
Eric S. Sheppard, Geography
University of California, Santa Barbara
\$33,406 - 2/15/97-12/31/97

Minnesota Pesticide Impact Assessment Program
B. Subramanyam, Entomology
U.S. Department of Agriculture
\$26,413 - 2/15/97-2/28/99

Selection for Early Vigor Plants Directly from High-Yielding Lines of Corn by Newly Developed Laboratory Method
Paul Li, Horticultural Science
Ling Chen Jian, Horticultural Science
Minnesota Corn and Research Promotion Council
\$73,500 - 12/31/97-11/1/00

Cold Season Planetary Boundary Layer (PBL) - Surface Interactions: Forest and Farmlands
Kenneth J. Davis, Soil, Water, and Climate
John M. Baker, Soil, Water, and Climate
USDOc, National Oceanic and Atmospheric Administration
\$56,996 - 9/1/97-8/31/98

Wolf-Elk Relations in Yellowstone National Park
L. David Mech, Fisheries and Wildlife
Yellowstone Park Foundation
\$5,000 - 1/1/98-12/31/98

Agricultural Residues for Paper Production
Ulrike Tschirmer, Wood and Paper Science
Shri Ramaswamy, Wood and Paper Science
Agricultural Utilization Research Institute
\$60,000 - 10/1/97-10/1/98

White Pine Blister Rust Research
Robert Stine, Forest Resources
St. of Minn., Department of Natural Resources
\$300,000 - 7/1/97-6/30/99

Component and Whole-system CO₂ Fluxes at Local to Regional Scales
Paul Bolstad, Forest Resources
Kenneth J. Davis, Soil, Water, and Climate
Peter B. Reich, Forest Resources
Indiana University
\$139,166 - 7/1/97-6/30/98

Climate Change Impacts on Eastern Deciduous Forest Productivity
Paul Bolstad, Forest Resources
USDA, Forest Service
\$21,000 - 10/15/97-10/31/98

Residential Windows Web Site Development
John Carmody, Underground Space Center
Lawrence Berkeley Laboratory
\$35,010 - 1/1/98-12/31/98

Service-Learning Credit
Gary W. Leske, Work, Community and Family Education
Rob Shumer, Work, Community and Family Education
Corporation for National and Community Services
\$10,700 - 9/18/97-11/30/97

Head Start Quality Improvement Center and Disabilities Service
Deborah Ceglowski, Center for Early Education and Development
Cooperative Educational Service Agency (CESA)
\$134,880 - 11/1/97-8/31/98

Balanced Approach/Restorative Justice Project (BARJ)
Mark Umbreit, Social Work
Florida Atlantic University
\$98,984 - 9/1/97-8/31/98

The Effects of Government Sponsored Enterprises (GSE) Secondary Market Decisions on Racial Disparities in Loan Rejection Rates
Samuel L. Myers, Economics
HUD
\$40,000 - 9/15/97-9/14/98

Glycolipid Transfer: Regulation by Membrane Interfaces
Roderick E. Brown, Hormel Institute
NIH, NIGMS
\$229,460 - 12/1/97-11/30/98

Adult Literacy: Issues of Personal and Community Development
Aydin Yucesan Durgunoglu, Psychology & Mental Health, Duluth
Spencer Foundation
\$50,000 - 05/15/98-05/15/00

Early Childhood Special Education Program Development
Joan Karp, Education and Human Service Professions, Duluth
Mary McEvoy, Educational Psychology
John E. Rynders, Educational Psychology
St. of Minn., Department of Children, Families, and Learning
\$60,000 - 1/1/98-12/31/98

TREC (Tutoring, Reading, Enabling Children)
Rod Oto, Admissions and Financial Aid, Morris
Carol McCannon, Admissions and Financial Aid, Morris
Minnesota Campus Compact Education Center
\$20,000 - 12/1/97-8/30/98

Retired Senior Volunteer Program
Deanna Patenaude, Division of Technical Studies, Crookston
Corporation for National and Community Services
\$33,302 - 1/1/98-12/31/98

Corrections:

Studies of the Mouse Kappa Opioid Receptor Gene
Li-Na Wei, Pharmacology
Horace Loh, Pharmacology
NIH, NIDA
\$166,597 - 9/30/97-8/31/98

Heritage Study (Phase 2)—Genetics Response to Exercise and Risk Factors
Arthur S. Leon, *Kinesiology and Leisure Studies*
Robert C. Serfass, *Kinesiology and Leisure Studies*
Ava J. Walker, *Kinesiology and Leisure Studies*
NIH, NHLBI
\$236,054 - 09/30/97-08/32/00

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>
 EGMS Help Line 612/625-1888

	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration, information 624-5599			spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	TBA	624-7021	@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
NIH, USDE, CDC, FDA, HRSA, DHHS	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Foundations, DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Foundations, DHHS	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
USDA, DOJ, HUD (contracts only); USIA, AID, USDE, DHHS	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
USDA, DOJ, HUD (grants only); DHHS	Karen Sachi	626-0270	karen@ortta.umn.edu
NASA, DOD (AF, Army); misc federal (contracts only); DHHS	Virginia Olson	624-0288	ginny@ortta.umn.edu
DOD (Navy); misc federal (grants only); DHHS	TBA	625-1359	@ortta.umn.edu
USDA (contracts only); USDE, NIH, HRSA, FDA, CDC, DHHS	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
USDA (grants only); DHHS	Doug Johnson	624-4121	doug@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
MN Technology, MN Health, NSF, VA	Todd Morrison	624-5066	todd@ortta.umn.edu
NSF	Launa Shun	624-2521	launa@ortta.umn.edu
NSF	Sandy Kenyon	624-5967	sandy@ortta.umn.edu
Ag. associations, other private	Kate Tennessen	626-7718	kate@ortta.umn.edu
Voluntary health	Liz Li	624-0810	liz-l@ortta.umn.edu
St of MN, governments	Amy Levine	626-7441	amy-l@ortta.umn.edu
St of MN, governments	Tracy McClun	626-8265	tracy@ortta.umn.edu
Business and industry, Medical School	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Business and industry, Medical School	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Business and industry, health sciences	Gary Gillet	624-5571	gary@ortta.umn.edu
Patents and Technology Marketing, information 624-0550, fax 624-6554			ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	TBA		
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	
Effort help line		625-7824	
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@ortta.umn.edu
Duluth, Office of Research & Technology Transfer			
Sr. grant and contract administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Morris, Grants Development, http://www.mrs.umn.edu/services/grants			
Administrative director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
	<u>related numbers</u>		
Sponsored Financial Reporting, fax 626-0321			
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of MN	Dan Hemauer	624-5007	dan-h@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Kerry Marsolek	624-8053	kerry@ortta.umn.edu
Supervisor, NIH, USDE	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs, fax 626-6061			
Director	Moira Keane	626-5654	irb@umn.edu iacuc@umn.edu

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ORTTA cannot change the faculty mailing list.

It is generated by the Staff Demographics office.

For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
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For changes regarding other labels, please complete the following:

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RESEARCH REVIEW

Office of Research and Technology Transfer

April 1998

RATE CHANGE!
for summer session TAs,
fringe benefits cost
\$12.44/hr + 8.7%

How Does University-Developed Software Get Transferred to Public Use?

Traditionally, a University invention or development is patented, and the patent is licensed to one or more businesses that commercialize it. It is often a long and costly path from invention, to manufacture, to successful sale, a path more appropriately pursued outside the University. While this may sometimes be true of software, it is not necessarily a large jump from academic activities to commercialization—especially in the area of educational offerings. The product can be distributed on a CD-ROM, and the World Wide Web can provide direct marketing, two-way communication with the target audience, and in some cases billing and immediate shipping. The effort involved may still be significant, but it is achievable.

To summarize, there are two major options for commercializing academic software:

1. License the development to a business enterprise that does the marketing, sales, licensing, insuring, and distributing to the end user.
2. If practical, feasible, and desirable, market the development directly to the end user from the University.

- An overview of her product,
- A series of case studies—updated monthly,
- Ordering instructions,
- A list of frequently asked questions,
- Biographies of the developers, and
- A direct e-mail link for further communication.

Patents and Technology Marketing (PTM), a division of the Office of Research and Technology Transfer (ORTTA), reviewed Lofsness' technology disclosure and assisted in deciding strategy, registering the copyright and trademark, creating the "shrink wrap" license that governs customer use, and setting up the income distribution agreement.

What is the Process for Transferring Software?

The process and considerations for protecting and transferring University software are similar to those for other technologies, though software does create some unique challenges and opportunities. As with other

{ continued on page 8 }

How to use
NSF's FastLane
see page 3

An example of a CD-ROM recently commercialized for direct sale through the University is "Hematography II," a tutorial that teaches the identification of abnormal blood cells. The author, Karen Lofsness, associate professor in the Department of Laboratory Medicine and Pathology, had licensed her first CD-ROM to an external publishing company. Its marketing activities did not meet expectations and Lofsness decided to "bring home" her second CD-ROM and market and distribute it directly through the University. She identified her target audience and proceeded to execute an advertising and marketing plan. A key element was a Web site, <http://www.umn.edu/hema/>, that contains:

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 10

April 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

New rates effective July 1, 1998

For details, see p. 6

TA, RA, AF: standard	\$6.64/hr + 8.7%
TA, RA, AF: advanced master's or Ph.D.	\$1.16/hr + 8.7%
Summer quarter TA, RA, AF	— 8.7%
Summer session TA, with tuition	\$12.39/hr + 8.7%
Summer session TA, without tuition	— 8.7%
Professional program assistant	— 8.7%
Dental fellow *	\$4.04/hr —
Medical fellow *	\$3.32/hr —

To the rates listed above, add 7.7% when a graduate student is enrolled for fewer than 4 credits, or less than 1 credit for advanced master's students and Ph.D. candidates. How this new rule applies to summer terms is not yet clear, however. This charge is for Social Security (6.2%) and Medicare (1.5%).

* The additional 7.7% is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.32/hr + 7.7%.

For more information about GA job classes and fringe rates, contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	25.6%	27.1%	13.9%
7/1/99 - 6/30/00	27.6%	27.5%	14.3%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

SPA's Q&A

Want to Use NSF's FastLane? Start Early!

Question: NSF is requiring some applications to be submitted, at least in part, through FastLane—NSF's system for moving proposals and other information via the Internet. Can you give some practical tips to those of us who haven't used FastLane or are still trying to understand how it works?

Answer: **Start Early!**

Especially if you've never used FastLane before, get an early start for three very good reasons:

- First, it takes time to understand how the FastLane software operates, and the pressure of a deadline won't make it any easier.
- Second, FastLane operates on an NSF server. The last couple of days before a deadline this server must accommodate everyone else applying to the same program(s) who also waited until the last minute. The system gets excruciatingly slow. NSF has extended a couple of deadlines because the system couldn't handle the volume, but you're playing a dangerous game if you gamble on NSF doing this in the future.
- Third, ORTTA can only view and endorse a PI's FastLane proposal. That means we cannot make the minor budget adjustments or add the general institution information, as we've typically done in the past.

Get Registered

- To even begin using FastLane a PI must have a personal identification number (PIN) and be registered. So must anyone shown as a co-PI! To register call ORTTA at 612/624-9004.

Complete the Institutional Information

- If you don't fill in this information, the grant administrator will have to call and tell you to do it. ORTTA can't do it for you; the system won't let us. You'll save a lot of time by doing it first.
- On the Cover page make sure you fill in the following boxes:

Program announcement/solicitation no., closing date: You must include the program announcement name or number if applying to a specific program. For unsolicited proposals enter "NSF 98-2."

For consideration by: name the NSF organizational units you'd like to review the proposal.

EIN number: The employer ID number is "416007513."

- On the Certification page make sure to include the following:

Debarment and Lobbying check boxes must be checked "no."

For the institutional authorized representative, list Todd Morrison, assistant director
telephone "6126245599"
fax "6126244843"
(use no slashes, dashes, spaces, or parentheses)
e-mail "awards@ortta.umn.edu"

Give Your Grant Administrator Access

- Once you have completed the Budget section, including the budget justification, call your ORTTA NSF grant administrator: Launa Shun, 612/624-2521, or Sandy Kenyon, 612/624-9567. Please consult <http://www.ortta.umn.edu/spa/nsf&um.htm> to find out whether Shun or Kenyon is assigned to serve your unit. Give Shun or Kenyon access to your proposal by clicking on FastLane's "Allow SRO Access" button. Shun or Kenyon will review the budget and advise you that it's okay or tell you what corrections must be made.

Don't Forget Complete Information Regarding Co-PIs

- Each co-PI must have a PIN number and be registered in FastLane.
- Each co-PI must enter demographic information in FastLane, otherwise no information will appear when co-PIs are listed on the Cover page.
- The Current and Pending Support section must be completed for each co-PI.
- You must first complete the proposal Cover page and list each co-PI before moving on to the budget. FastLane won't let you designate a co-PI on the budget unless she or he is listed on the cover.

Deliver Paper Copy for Final Processing Through ORTTA

- You will need to deliver one complete paper copy of the proposal along with the proposal routing form to ORTTA before ORTTA can submit the electronic version to NSF. This must include original PI and co-PI signatures on the Certification page and any additional documentation that cannot be submitted via FastLane, such as support letters or color photos. We encourage that either the PI or someone who has been given access to the proposal bring it to ORTTA, just in case a change needs to be made. ORTTA staff do not have access to make any changes to the PI's proposal.

National Institutes of Health

NIH Revises Application Form

The National Institutes of Health has revised its PHS 398 application and forms and will distribute the new version sometime in May. Until the new version is available, the current version, approved through 9/30/97, is to be used.

NIH has an ample supply of the old forms; however, they have run out of the instruction booklets. Instructions may be accessed from the web at <http://www.nih.gov/grants/forms.htm> or you may use the University's Electronic Grants Management System (EGMS), which provides an alternative to the hard-copy forms. The EGMS rule-guided program will apply UM rules, make budget calculations, audit the information for completion, and allow you to generate the NIH forms and proposal routing forms (BA23s). For further assistance with EGMS, please e-mail egms@boombox.micro.umn.edu.

RSPP

IACUC Laboratory Inspections

Prompted by preliminary recommendations by site visitors from the Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC), the IACUC will inspect laboratories where animal procedures are performed. The IACUC policy has always included inspection of housing, but IACUC will now systematically inspect additional sites.

Researchers will be asked to provide information on where procedures will be performed and the nature of the procedures, and they may be asked to be present during inspections.

The IACUC application forms are being revised and will include questions that document the housing, location, and procedures planned for each protocol. It is expected that a complete revision in the forms will be available in June 1998. In the meantime, researchers are encouraged to use the application form available at the IACUC web site, <http://www.research.umn.edu/subjects.html>. Researchers can expect that location information will be required as a stipulation to final approval and may expect a telephone call for follow-up if the information is unclear.

All AAALAC site visit recommendations are not expected until later this spring; additional changes in the IACUC procedures may be required following a review of the comprehensive report.

by Moira Keane
director, Research Subjects' Protection Programs

CBS

Upcoming Seminars in Biological Sciences Listed for You

One of the University's most thorough lists of upcoming seminars and lectures in the biological sciences is the "CBS Seminar List."

It announces work by and for biologists on both the St. Paul and Minneapolis campuses—from "Diode Array Technology/Uses in Plant Genetics" in Agronomy and Plant Genetics to "Photoaffinity Studies of Ligand-Receptor Interactions" in Medicinal Chemistry, for example.

During the academic year, CBS mails the seminar list biweekly on paper. The list is also available at http://biosci.cbs.umn.edu/college_info/seminar.html.

To receive the "CBS Seminar List" or place an announcement in it, send mail to "Seminar," CBS, 213 Snyder, or contact Valerie Ott, 624-9270, vott@biosci.cbs.umn.edu.

RAR

Thank you for Helping with the Animal Use Review

Thanks to everyone who participated in the site visit and review of the AHC animal care and use program by the Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC) at the end of February. As was anticipated, the site visitors were favorably impressed with our management of such a large and diverse set of facilities and programs for animals used in research and education. Also anticipated were numerous suggestions for improvements in monitoring all aspects of animal care and use, which the AHC, IACUC, and RAR are reviewing and implementing as appropriate. The College of Veterinary Medicine was applauded for improvements in its facilities and programs, and once the official site visit report is received from AAALAC this summer, Veterinary Medicine is expected to join the rest of the AHC in being AAALAC accredited.

by Cynthia S. Gillett
director, Research Animal Resources

SPA

For Material Transfer Agreements, Use the *Old* BA23 Form

When you receive proprietary research materials into the University—unique proteins or cell lines, for example—the owner of that material typically requires a material transfer agreement (MTA) to define your allowable use of the material. ORTTA has authority from the Board of Regents to sign MTAs on behalf of the University.

When you forward an MTA to ORTTA, include the University's *old* BA23 form.

The old form, and other information regarding material transfer, is available at <http://www.ortta.umn.edu/forms/forms.htm>. Look for "MTA" in the menu.

The old BA23 asks for the account numbers of the projects that will make use of the transferred material. Those numbers are essential. The form needs one signature—the PI's. Using something other than the old BA23 will slow the processing of your MTA.

Find the old BA23 at <http://www.ortta.umn.edu/forms/forms.htm>.

For all other purposes, the old BA23 form has been replaced by the "Proposal Routing Form" available via the University's Electronic Grants Management System (EGMS). See <http://egms.ortta.umn.edu/>. The new form can be filled out on-line, then printed on paper for signatures. With proper departmental set-up, the EGMS form can also be electronically routed for signatures.

The EGMS form cannot, however, be used for material transfer agreements. It was designed to deal with funding and does not gather adequate information regarding materials.

For more information about the EGMS form, call your grant administrator or write to egms@boombox.micro.umn.edu.

For information about transferring material from inside the University to organizations outside the University, please call Patents and Technology Marketing, 612/624-0550, ptm@ortta.umn.edu.

SPA

Application Information

The following is a list of information that may be requested by funders of sponsored projects.

Legal name of the University: Regents of the University of Minnesota (usually The University of Minnesota is sufficient on application materials).

Founding date: February 25, 1851.

County of applicant: Hennepin (Minneapolis), Ramsey (St. Paul), Polk (Crookston), Stevens (Morris), or St. Louis (Duluth).

U.S. Congressional District: 5th (Minneapolis), 4th (St. Paul), 7th (Crookston), 7th (Morris), or 8th (Duluth).

Type of applicant: higher education institution.

Internal Revenue Service and Federal identification number: 41-600-75-13-W

Minnesota tax ID number: 8029894

Contractor establishment code (CEC): 55692709D

CAGE number: 0DH95

DUNS number:

Crookston:	87-422-9131
Duluth:	78-105-4168
Morris:	07-150-1969
Twin Cities:	55-591-7996

Cognizant audit agency: Department of Health and Human Services Audit Agency

Accreditation body: North Central Association of Colleges and Schools

Classification: The University of Minnesota is classified as a 501.C.3 organization.

Officials authorized to sign proposals and accept contracts and grants:

1) associate vice president for research and technology transfer (Ed Wink); 2) assistant directors of Sponsored Projects Administration (Mary Lou Weiss or Todd Morrison); or 3) outside the Twin Cities, call the local grant administrator.

Checks to be made payable to: The University of Minnesota.

Mail checks to:
University of Minnesota
Office of Sponsored Financial Reporting
1100 Washington Avenue South, Suite 201
Minneapolis, Minnesota 55415-1226

Fringe Benefit Rates in Detail

1997-98 Actual	Civil Service	Academic	Graduate Assistant
Retirement	4.2	13.6	--
Group Life and Disability	--	0.5	--
Workers Compensation	1.9	--	--
Unemployment	0.4	0.0	--
Social Security	6.2	5.2	6.2
Medicare	1.5	1.5	1.5
Tuition	0.8	0.2	*
Health Insurance	<u>13.2</u>	<u>6.1</u>	<u>8.4</u>
Total	28.2%	27.1%	--

1998-99 Preliminary	Civil Service	Academic	Graduate Assistant
Retirement	4.0	13.7	--
Group Life and Disability	--	0.4	--
Workers Compensation	1.2	--	--
Unemployment	0.3	0.1	--
Social Security	6.2	5.2	6.2
Medicare	1.5	1.5	1.5
Tuition	1.4	0.2	*
Health Insurance	<u>11.0</u>	<u>6.0</u>	<u>8.7</u>
Total	25.6%	27.1%	--

1999-00 Projected	Civil Service	Academic	Graduate Assistant
Retirement	4.0	13.5	--
Group Life and Disability	--	0.4	--
Workers Compensation	0.7	--	--
Unemployment	0.4	0.1	--
Social Security	6.2	5.4	6.2
Medicare	1.5	1.5	1.5
Tuition	0.8	0.2	*
Health Insurance	<u>14.0</u>	<u>6.4</u>	<u>9.5</u>
Total	27.6%	27.5%	--

* For graduate assistants, see page 2 and article at right.

Source: UM Office of Budget and Finance,
 "1998-99 Compact/Budget Instructions: Phase IIA," Feb. 1998.

Fringe Benefit Rates for Graduate Assistants, 1998-'99

Fringe benefit rates for graduate assistants will change slightly with the new fiscal year. In order to pay for assistants' tuition benefits, charges to employers will increase slightly—from \$6.38 to \$6.64 per hour in most cases. The charge for assistants' health care will also increase, from 8.4 percent of their gross pay to 8.7 percent.

In a change of federal rules that took effect last January, the 7.7 percent charge for Social Security and Medicare now applies to the gross pay of graduate students enrolled for fewer than 4 credits per quarter, or less than one credit for Ph.D. candidates and advanced masters students. In previous years there were also limits regarding how many hours students worked; those no longer apply. How the new rules apply to summer 1998 is still uncertain, however.

Tuition benefits and fringe benefit charges for student assistants in 1998-'99 are described in the University budget instructions and summarized below. They are also still subject to change. For more information, call George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

In academic 1998-'99, typical graduate assistants—i.e. *research assistants, teaching assistants, and administrative fellows* (RAs, TAs, and AFs)—must register for at least 6 credits per quarter. Their tuition benefits will provide up to the value of the Graduate School tuition band—that's 7 to 14 credits per quarter for an estimated tuition of \$1,726.

Graduate assistants working half time (20 hours per week for 13 weeks per quarter) earn full tuition benefits. Assistants working one-quarter time receive half their tuition. For appointments in-between, the benefits are prorated. Appointments of less than quarter time earn no tuition benefits. Any assistantship of quarter time or more also qualifies for waiver of nonresident tuition.

To pay for tuition benefits, employers are charged an hourly rate for the time an assistant works. The full benefit of \$1,726, for 260 hours of work, means a fringe benefit rate of \$6.64 per hour.

Doctoral candidates and advanced masters students must register for at least one credit and may be employed in new job classes with lower benefits and fringe rates. Such assistants receive tuition benefits for one credit per quarter—approximately \$302 per quarter—for a fringe rate of \$1.16 per hour.

Doctoral candidates are students beyond preliminary exams and 36 thesis credits. Advanced masters students have completed their coursework and thesis credits, and applied for and received advanced status from the Graduate School.

In summer 1998, the value of tuition benefits will be \$1,660 or some prorated portion thereof. They may be applied to any combination of credits and summer sessions.

Summer quarter job classes provide no tuition benefits and cost employers no tuition-benefit charge. But employers do have to pay 7.7 percent of employees' gross for Social Security and Medicare.

Summer session teaching assistants receive the same total pay and benefits as TAs in other terms, and their employers pay the same amount for those benefits. But summer terms are fewer hours, so tuition benefits have to be paid for at a higher rate—\$12.39 per hour.

Professional program assistants, typically law and MBA students, receive no tuition benefits and cost employers no tuition-benefit charge.

Medical fellows and dental fellows receive tuition benefits \$1,660 per quarter. Their employers pay the cost of tuition at \$3.32 and \$4.04 per hour, respectively.

by Phil Norcross

Science Board Recommends Adjustments to Graduate Education

The National Science Board's February 26 report, "The Federal Role in Science and Engineering Graduate and Postdoctoral Education," includes the following recommendations:

- Federal agencies should insure that their funding advances both research and graduate education.
- Federal agencies should promote closer collaboration between faculty in research and nonresearch institutions, thus exposing graduate students to a greater variety of career options and improving the transition from undergraduate to graduate school.
- Federal agencies should recognize and reward institutions that provide a range of options to graduate students, including interdisciplinary work, teamwork, and business management skills.
- Agencies and universities should seek more effective ways to attract and retain talented students from underrepresented groups, and they should guard against strategies that inadvertently keep underrepresented groups from the mainstream. Agencies might consider funding criteria to further this end.
- High-ability students should be identified earlier, before college, and encouraged to consider careers in science and engineering.
- Universities should examine the current use and possible misuse of assessment tools like the Graduate Record Examination.
- Universities should better integrate postdoctoral scholars into the university community.
- Recognition of faculty for their research should be appropriately balanced with recognition for teaching.
- Federal agencies' unnecessary and unintended interruptions in research programs and associated support to graduate students should be prevented.
- The federal government should review conflicting and confusing treatment of graduate students and postdoctoral researchers—as students or employees—in federal regulations and policies.
- Federal agencies should reduce the administrative burden on faculty researchers and so increase the time available for teaching.

The NSB is appointed by the U.S. president to govern the National Science Foundation. For more information, see <http://www.nsf.gov/home/nsb/document.htm>.

Software

(continued from page 1)

technologies, the process begins with a disclosure of the software to PTM. The initial contact with PTM may be a single phone call, memo, or message—and these are welcome.

After the initial discussion, the developer sends PTM an invention disclosure. The disclosure form, <http://www.ortta.umn.edu/forms/forms.htm#ptm>, is a confidential document by which University staff describe a new technology developed as the result of research and ask PTM to evaluate the invention's patent, copyright, and market potential. Some of the information required is:

- The funding source and grant number for projects that contributed to the invention,
- The prior art, and prior publications by the inventor,
- The names of all the individuals who participated in creating the software.

Patents and Technology Marketing reviews the disclosure with the developers to:

- Determine what restrictions, if any, have been placed on commercialization by the source of funding for the development, and satisfy all obligations to the funders.
- Determine who developed the invention, which is important to determining ownership. University software is often developed over a period of time and involves many authors.

Authors and developers who are not University employees may have rights to the software. When non-University employees help develop software, it is important to have agreements in place from the beginning that grant ownership to the University or spell out how ownership and profits will be shared. Tuition-paying students are not University employees unless they are also hired as research assistants or in other positions.

- Identify market potential, and to understand whether the development is best licensed to an outside firm for commercialization or whether direct sales to customers should be considered.
- Decide how to best protect intellectual property rights in the invention. The two principal types of intellectual property protection available for software are patent protection and copyright protection. The name and goodwill of a product can also be protected through trademark.

After discussing these issues, a decision must be reached regarding the commercial potential of the software. Either the University will proceed with protecting and seeking to commercialize the software, or it will waive the rights to the developers (subject to any obligations to sponsors). If

the University decides to protect and commercialize the software, its next steps are to:

- Create an income distribution agreement based on the applicable policy and whether the software will be marketed directly by the University or through a licensee. Such agreements are governed by the University of Minnesota Board of Regents Policies "Patent and Technology Transfer" and "Educational Materials."

In some cases, however, neither of these policies applies and developers may not be entitled to a share of any income.

- Market the software to companies that may want to commercialize it, or work with the developers to create a direct sales approach.
- Prepare a license or licenses for third parties, or prepare a license for end users.

How can we protect intellectual property rights to software?

"Whatever tends to lower the protection given to intellectual property is so much taken from the forces which have been active in securing the advances of society during the last centuries." —Professor Nathaniel Shaler, Harvard University, circa 1936.

For most foreign patents, the application should precede any public disclosure.

Patent Protection: A patent is a federal grant issued by the U.S. Patent and Trademark Office (PTO). It provides a 20-year monopoly on the use and commercialization of the claimed aspects of a software program. The patenting of software is a somewhat gray area with respect to both legal aspects and commercial value. Until recently, it was not often done; in fact, the PTO initially considered most, if not all, software unpatentable. But in the last few years there has been an increasing emphasis by many companies on patenting software. Patents are expensive—software patents generally run \$10,000 and up—and are pursued with help from patent attorneys outside the University who are selected for their expertise in a given area. An example of software for which the University is filing a patent application is the GroupLens collaborative filtering system developed in the Department of Computer Science and Engineering and licensed to Net Perceptions (see <http://www.movieLens.umn.edu/about.html>).

Although patent protection for software is not often sought by the University, it can be very important and developers should keep the basic rules in mind:

The U.S. Patent Office grants a patent on an invention that is useful, novel, and nonobvious. Novelty and nonobviousness depend on relevant past technology, called the “prior art.”

Computer code, like other works of authorship, enjoys copyright protection the moment it is written. Registering a copyright and publishing copyright notice is advisable, nonetheless.

For a potential patent, one of the first questions to ask is “What was previously published or commercialized by the developers?” For a U.S. patent, anything that the inventors have published, used in public, offered for sale, or sold one or more years prior to the application filing date becomes a part of the prior art for that application. For example, a year after publishing an article about beige-colored lasers, the inventor files a patent application. The Patent Office will not grant the patent unless it finds that the invention is novel and nonobvious in comparison to the published article.

Anything published, used in public, offered for sale, or sold by anyone other than the inventor prior to the date of filing a patent application is also considered prior art. While the United States offers a one-year grace period after publication, public use, sale, or offer for sale by the inventors, most foreign countries have no such grace period. To obtain a patent in most foreign countries, the application should normally be filed before any public disclosure or public use anywhere. However, most foreign countries will recognize the U.S. filing date if that date is before any publication.

For all of these reasons, early disclosure of possible inventions is critical if patent protection is to be sought.

Copyright Protection: Copyright protects “original works of authorship,” and for software, should be used in all cases, even when patent protection is also sought. Copyright protects the *embodiment* of ideas, methods, or systems (not the ideas, methods, or systems themselves). In the language of copyright law, a body of computer code is a “literary work,” like a symphony or a piece of journalism. Copyright does not bar readers from making use of the ideas or logic imbedded in your software, but it does bar them from copying your code. Said another way, copyright law generally distinguishes between the con-

crete expression of an idea, which is protectable, and the abstract idea, concept, or information behind the work, which is not.

Copyright protection extends for 50 years after an author’s death, except in cases of work for hire, when it extends for 100 years after creation or 75 years after publication, whichever comes first. Copyright protection exists whether or not a work is published; software is automatically protected the moment it is written—or “fixed in material objects” as the U.S. Copyright Office puts it. It is highly recommended, nonetheless, that all software be marked with the appropriate copyright notice: “©” or the word “copyright,” the year of authorship, and information identifying the owner. For example: “© 1997 Regents of the University of Minnesota. Twin Cities. Department of Dermatology. All Rights Reserved.”

Although registration of a copyright is not required, it is advisable to register with the U.S. Copyright Office before commercializing a work. Registration establishes a public record of the copyright claim and can serve as evidence in court. If the registration is made within three months of publication or three months prior to an infringement, the owner of the copyright may claim statutory damages; otherwise, the copyright owner must prove actual damages and lost profits. Copyright registration also allows the copyright owner to record the registration with the U.S. Customs Service for protection against the import of infringing copies.

Copyright registration is relatively simple: Send the Register of Copyrights, in a single package, a properly completed application form, a \$20 filing fee, and a copy or copies of the work being registered (the exact requirements vary with the type of work and the date of first publication). PTM will assist in this process for software it manages.

(This explanation of copyrights relies on the “Copyright Information Circulars” published on the web page of the U.S. Copyright Office—<http://lcweb.loc.gov/copyright/>.)

Rights and Obligations Concerning Software

Rights and obligations regarding ownership, protection, and sale of software are currently specified by five principal sources:

1. Contracts with sponsors, including the federal government, often require reporting of potentially patentable inventions, and they may grant sponsors other rights to software developed under their funding.
2. The Regents Policy “Patent and Technology Transfer” covers all software, patentable or not, that results from University research, excluding software that is primarily educational.

{next page}

3. The Regents Policy "Educational Materials" covers *University-sponsored* educational materials, i.e. educational materials that have been developed with University support or direction.
4. The work-for-hire principle of copyright law may govern University employees creating software as part of their work assignments. An example would be a University programmer assigned by a department to develop a database for the department.
5. University Financial Policy 3.2.3, "Selling to External Customers," specifies why and how units may sell software directly to users.

The following provides a summary of rights and obligations as determined by these sources. This summary does not provide detailed analysis; the actual rights and obligations for any particular item of software depend on the specific situation and on the precise text of the relevant policy. For Regents policies, see <http://www.umn.edu/regents/polindex.html>; for the external sales policy, see http://www.fpd.finop.umn.edu/3/Sec2/Pol323/External_Sales.html.

Contracts with Sponsors: All Federal grants and many private grants are covered by contracts that give the sponsors certain rights in software resulting from the funded research. Often the University is obligated to disclose the developed software to the sponsor and the sponsor has some right (exclusive or nonexclusive) to use the software. It is very important that principal investigators know the obligations to sponsors and make certain these obligations are met. Grant administrators in ORTTA are a good source for determining these obligations. PTM determines any obligations to sponsors for software disclosed to PTM and ensures those obligations are satisfied before any other action is taken.

Patent and Technology Transfer Policy: The Patent and Technology Transfer policy covers software resulting from University research, excluding software that is "primarily educational, literary, or artistic in nature." Developers are required to disclose software covered by the policy if an agreement with a sponsor requires disclo-

Distribution of Net Royalties on UM Software

Patented software: 1/3 to developers, 1/3 to their colleges and units, 1/3 to PTM

Copyrighted-only software: 3/4 to developers, 1/4 to PTM

University-sponsored educational materials: 1/2 to developers, 1/2 to the University

Direct sales from UM to end users: PTM treats the unit making the sale as if it were a third-party licensee and applies and distributes a reasonable internal royalty.

Other agreements are sometimes suitable.

sure to the sponsor, or if developers wish to seek protection or commercialization of the software. The University, through PTM, has the right to take ownership of disclosed software and determine whether and how to best protect and commercialize it, subject to any obligations to sponsors.

The University shall share licensing income with developers as specified by the policy:

- For software that is copyrighted only, the developers receive 75 percent of the net licensing income (after the University recovers its out-of-pocket expenses), and 25 percent goes to PTM.
- For software on which the University seeks patent protection, the developers receive 33-1/3 percent of the net income, 25-1/3 percent goes into a University research account for use by the developers, 8 percent goes to the developers' college, and 33-1/3 percent goes to PTM.
- Other special arrangements for income distribution are made with the agreement of software developers as may be suitable. In particular, if the software is handled as an external sale to end-users, it is not appropriate to treat all of the sale income as licensing income subject to distribution per the policy (this is discussed more fully below). In some cases developers prefer that some or all of their personal income go to support research or a departmental program. PTM can accommodate this and often is willing to assign part of its share for such purposes.

Educational Materials Policy: The copyrights to *University-sponsored educational materials* (USEM) belong to the University under this policy. *University-sponsored* means the author used University resources—help from the Digital Media Center, for example—or it means the work was commissioned and paid for by the University. The policy does not specifically name software in its list of educational materials; it does, however, name "programmed instructional materials" and "other materials used for instruction."

Income from the sale of University-sponsored educational materials "ordinarily" goes half to the authors, half to the University. However, as noted above for the Patent and Technology Transfer policy, this distribution of income is applied by PTM to royalties resulting from the licensing of the software to external resellers, not to direct sales from the University. Special arrangements for income distribution are common for educational software.

Work for Hire: Under principles of work-for-hire, the University owns software that results from an employee's work as an employee. These principles are most often applicable to situations such as that of programmers assigned specific development tasks. Unless such software is covered by the patent policy or the educational materi-

als policy, the University would not ordinarily share any income from work-for-hire software with the developers.

Selling to External Customers: The Board of Regents resolved in 1995 that University units are encouraged to generate revenue from external customers "in a commercial and competitive manner." That resolution led to the 1996 administrative policy, "Selling to External Customers."

Sales to customers, says the policy, should further the University's mission, provide learning opportunities for students, foster collaboration with external constituencies, and be self-supporting or even profitable. The policy defines external sales as "sale of goods or services by units on a regular and continuing basis, predominantly to the general public." Transactions handled by ORTTA for technology transfer, license, and trademark agreements are excluded.

The business of external sales is to be managed by colleges and units, the policy explains, with support from the University offices for the general counsel, treasurer, taxes, insurance, accounting, and environmental health and safety. Units' requests for the direct sales of software go to the University's external sales coordinator—Russ Leverenz, lever006@tc.umn.edu, 612/625-0752. For software that falls within the jurisdiction of PTM but will be sold directly to end users, PTM coordinates with Russ Leverenz and the developers to appropriately protect the software and create the necessary agreements to govern its sale. In order to define an appropriate distribution of income from such sales, PTM treats the unit making the sale as if it were a third-party licensee, applies a reasonable internal royalty rate to the sales, and distributes the income defined by that royalty under the provisions of the applicable policy.

In Conclusion: PTM's Role is to Help

Faculty bring new software programs to the Patents and Technology Marketing staff every month. The level of activity in this area has exploded, and PTM works to protect software and to enable its sale to customers outside the University.

Where appropriate, PTM works with developers and their departments to license directly to end users. For example, the Minnesota Living with Heart Failure Questionnaire is licensed directly to major pharmaceutical companies. The Hematography CD-ROM can be ordered directly from the University, with information updates posted regularly on the web site. In other cases, PTM uses the more traditional method of licensing third parties to sell to end users.

PTM provides advice and services regarding the rights of sponsors, language for contracts and end-user licenses, protection of software through patents and registration of

UM's Intellectual Property Policy is now Being Rewritten

Since the end of the faculty's union campaign in early 1997, faculty governance and the Office of the Vice President for Research have been working to replace the current regents' policies for educational materials and patents and technology transfer with a new policy titled "Intellectual Property" (copyrights, patents, and trademarks are intellectual property). Frances Lawrenz, the assistant vice president for research who coordinates the work, hopes it will finish this coming summer.

The most recent draft of the policy, dated last December, asserts the University's claim, with exceptions, on "work products" created by its employees with its resources. Those products may include art, data, instructional materials, and research findings, for example, embodied in multimedia, computer programs, spreadsheets, or CD-ROMs, for example.

The chief exception is that the University makes no claim on "regular academic work products," which means "any work product which constitutes or is intended to disseminate the results of academic research or scholarly study." Such works include books, articles, art, and "*software specifically required to support a regular academic work product or which is designed to disseminate the results of academic research and scholarly study.*"

Net income from the University's intellectual property will be distributed, says the draft, one-third to the creators, one-third to their units and colleges, and one third to the University. The University's portion will go to endow a support fund for research and graduate education and to cover operation of PTM.

by Phil Norcross

copyrights and trademarks, negotiation of agreements with third-party sellers, and negotiation of agreements regarding the distribution of sales and royalty income. Jim Hildebrand, PTM's software specialist—612/624-9568, jim-h@ortta.umn.edu — is the person to contact for assistance in any of the above areas. You may also visit PTM's home page, <http://www.ortta.umn.edu/patents.htm>, for information regarding technology transfer topics, including disclosures.

by Jim Hildebrand and Tony Strauss, PTM

PTM's software specialist is
Jim Hildebrand, 612/624-9568

1998-2000 McKnight Land-Grant Professors

The Graduate School is pleased to announce the 1998 recipients of the McKnight Land-Grant Professorship. The goal of this program is to advance the careers of our most promising junior faculty at a crucial period in their professional lives. Recipients are honored with the title McKnight Land-Grant Professor and endowed chairs they will hold for two years. The award consists of a \$23,000 research grant in each of two years, summer support, and a year's research leave in the second year. The winners were 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; their potential for attracting outstanding students; and the significance of their research and the clarity with which it is conveyed to the nonspecialist. Profiles of the six 1998 recipients follow.

C. Daniel Frisbie, Chemical Engineering

Ph.D., Massachusetts Institute of Technology

While plastics are commonly thought to be electrical insulators, there are growing numbers of plastics that can conduct electricity. Understanding the factors that influence conduction in plastic material lags far behind that of conventional semiconductors such as silicon, and metals. Professor Frisbie studies plastic conduction at small scales, which will make possible the development of new kinds of electronic devices based on unusual conduction phenomena.

Rachel Kuske, Mathematics

Ph.D., Northwestern University

Professor Kuske combines "perturbation analysis" with computer-intensive approaches to explore the effects of small changes in a system. These methods provide insight for a wide variety of engineering and scientific research areas where small changes make a critical difference—including, e.g., interacting lasers, vibrations in engineering structures such as turbine engines, stock and option pricing, and propagation of nerve impulses.

André Lardinois, Classical and Near Eastern Studies

Ph.D., Princeton University

Most interpretations of Sophocles' tragedies have focused exclusively on the tragic heroes. Professor Lardinois contends that our understanding of the heroes has to be balanced by a greater appreciation of the "lesser" figures in the plays. In his study, he will focus on those figures who often confront the heroes: the prudent advisers. The ultimate goal is a better understanding of Sophocles' tragic vision through an assessment of the limitations of prudent restraint.

Eric Munson, Chemistry

Ph.D., Texas A&M University

Professor Munson uses solid-state nuclear magnetic resonance (NMR) techniques to investigate new and challenging areas of materials research by studying the structure and dynamics of atoms and molecules in materials. His research group uses existing NMR methods and develops new ones in order to study molecules on surfaces, to analyze environmental samples in situ, and to understand how the structure of polymers and pharmaceuticals influences their physical properties.

Martha Tappen, Anthropology

Ph.D., Harvard University

Meat eating played a central role in the evolution of human physiology and behavior, yet it is unclear when significant carnivory began and what form it took—hunting or scavenging. By studying animal bones from modern settings, and from archaeological and fossil sites, Professor Tappen can better understand the onset of carnivory and its implications for diet, food-sharing, the division of labor between men and women, and other human characteristics.

Donna Whitney, Geology and Geophysics

Ph.D., University of Washington

The aim of Professor Whitney's research is to understand mountain formation, a process that profoundly affects Earth's structure, topography, and climate. Because mountain-building is typically accompanied by exposure of rocks that formed deep in the crust, formerly inaccessible rocks provide information about the depths, temperatures, and rates of deep crustal processes that accompany the construction of mountains.

Source: <http://www.research.umn.edu/new/mcknight4.html>

Recent Publications by University Authors

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**Please send your new citations to
phil@orta.umn.edu.**

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More Information

To receive copies of NIH and NSF application kits, please call 612/624-0061, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ National Science Foundation

**Portable Libraries Initiative:
Virtual Prototyping/Simulation
NSF-98-64**

Under the Optimized Portable Algorithm and Application Libraries (OPAAL) program, the National Science Foundation and the Defense Advanced Research Projects Agency will fund research and development of new approaches to designing and creating efficient algorithms and optimized libraries for large-scale numerical modeling and simulation of physical phenomena arising in industrial applications. Projects should develop mathematical formulations to enable automatic compilation of scaleable, high-performance software libraries of key numerical kernels. Algorithmic approaches should facilitate systematic and effective machine-specific tailoring of computational constructs such as data structures and communication protocols.

Of special interest are projects with impact on modeling and simulation of advanced manufacturing processes and systems, especially those involving multiple scales and complex physical and chemical processes.

Four to seven grants ranging from \$300,000 to \$700,000 a year for up to three years will be awarded. Eligible applicants include colleges and universities and other nonprofit research institutions.

Letters of intent are required by **May 22, 1998**. Full proposals are due on **July 1, 1998**. Contact A.I. Thaler, 703/306-1880, thaler@nsf.gov; J. Strikwerda, 703/306-1870, jstrikwe@nsf.gov; or Anna Tsao, 703/696-2287, atsao@darpa.mil. For a complete copy of the announcement go to <http://www.nsf.gov/cgi-bin/getpub?nsf9864>.

■ National Science Foundation, et al. Digital Libraries Initiative - NSF-98-63

The Digital Libraries Initiative, Phase 2 (DLI-2), is administered by the National Science Foundation and jointly sponsored by the Defense Advanced Research Projects Agency, the National Institutes of Health's National Library of Medicine, the Library of Congress, the National Aeronautics and Space Administration, and the National Endowment for the Humanities.

DLI-2 seeks to build networks of user-friendly medical information systems with intelligent approaches to indexing, data retrieval, and presentation. It builds on the previously-sponsored research on digital libraries to explore how innovative digital libraries and applications can help people make informed decisions about their health and medical care. Although not restricted to health care applications, digital libraries research with health care applications is an important goal of the project.

Research is organized into three areas: 1) Human-Centered Research, which seeks further understanding of the impacts and potential of digital libraries to enhance creating, seeking, and using information, and to promote technical research designed to achieve this; 2) Content and Collections-Based Research, which focuses on better understanding of and advancing access to novel digital content and collections; and 3) Systems-Centered Research, which focuses on component technologies and integration to realize information environments that are dynamic and flexible, responsive to the lowest level, and capable of adapting large, amorphous, continually growing bodies of data.

Collaboration among academic, industry, nonprofit, and other organizations is strongly encouraged to establish better linkages between fundamental science and technology development and use.

Two types of projects will be funded: 1) individual investigator research grants, not to exceed \$200,000 per year for 1 to 3 years; and 2) multidisciplinary group research projects, awards not to exceed \$1.2 million per year for 1 to 5 years.

Letters of intent are due **April 15, 1998**, for the 1998 competition and **February 15, 1999**, for the 1999 competition. Proposal deadlines are **July 15, 1998** and **May 17, 1999**, respectively. For further information go to <http://www.nsf.gov/cgi-bin/getpub?nsf9863>.

■ NSF/NASA

Origin and Evolution of Terrestrial-Planet Atmospheres

The National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) share the primary federal responsibility for support of research in astronomy and planetary science, and the two agencies have previously supported highly successful joint initiatives. They are now prepared to accept proposals for research on some comparative aspects of the atmospheres of the planets and satellites in the solar system.

Studies of the similarities and differences of the variety of planetary environments in the solar system are expected to further an understanding of the fundamental physical processes that shape these environments. This in turn will deepen our understanding of the processes that have affected and continue to affect Earth's environment. Such understanding is expected to be crucial to understanding the development of Earth and the origin and evolution of life on Earth, as well as being integral to investigations of change in the global geospace environment.

Competitions will continue for at least three years. The focus for 1998 follows; those for 1999 and 2000 have yet to be determined. NSF will support proposals that address broadly related issues concerning the atmospheres of the terrestrial planets and satellites in the solar system. NASA support will target proposals on the origin and evolution of the atmosphere of Mars.

The application deadline is **May 13, 1998**. Prior to submitting proposals, prospective investigators are encouraged to contact either Dr. Vernon Pankonin, Division of Astronomical Sciences, NSF (vpankonin@nsf.gov, 703/306-1826), Dr. Sunanda Basu, Division of Atmospheric Sciences, NSF (jbasu@nsf.gov, 703/306-1529), or Dr. Jay Bergstralh, NASA (jay.bergstralh@hq.nasa.gov, 202/358-0313). A copy of the announcement may be found at <http://www.nsf.gov/cgi-bin/getpub?nsf9871>.

■ National Science Foundation

Women and Girls in Science, Engineering, and Mathematics

The National Science Foundation (NSF) has announced the new guidelines and priorities for the Program for Women and Girls in Science, Engineering and Mathematics. For fiscal year 1998, it is anticipated that approximately \$15 million will support two types of projects:

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1. Implementation and Development Projects (IDP)

build on existing research about gender and the science, engineering, and mathematics (SEM) infrastructure in order to create positive permanent change in academic, social, and scientific climates. Awards will be made for up to three years with budgets up to \$300,000 per year. Proposals with budgets over \$100,000 are required to be collaborative efforts, have multiple target populations, effect permanent change, include strategic leverage plans connecting the project with other initiatives, and reflect significant commitment from the collaborating institutions.

2. Information Dissemination Activities (IDA) insure that there is widespread dissemination of strategies, research results, and resources that will accelerate efforts to increase women's involvement in SEM. IDA awards provide mechanisms for individuals to interact and exchange both strategies and information related to their SEM participation.

For IDP proposals requesting *less* than \$100,000, preliminary proposals must be submitted by **October 1** annually and full proposals by **February 1**. IDP programs *over* \$100,000 must submit preliminary proposals by **January 2** annually, and full proposals by **May 1**. For IDA programs, preliminary proposals will be accepted **at any time**. Inquiries may be directed to Programs for Women and Girls, Division of Human Resource Development, Directorate for Education and Human Resources, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; 703/306-1637, hrdwomen@nsf.gov. The announcement and guidelines may be downloaded from <http://www.nsf.gov/cgi-bin/getpubs?nsf9851>.

■ McKnight Foundation

The McKnight Foundation has set new deadlines for receipt of letters of inquiry. The new deadlines are:

Human Services and International	Feb 15, May 15, Aug 15, Nov 15
Arts and Environment	Jan 15, Apr 15, Jul 15, Oct 15

A letter of inquiry briefly describing the purpose for which support is sought and the amount requested is the first step in applying for a grant. The foundation reviews the letters to determine if the request falls within foundation guidelines. If so, a full proposal is invited.

For further information, contact the McKnight Foundation at 600 TCF Tower, 121 South Eighth Street, Minneapolis, MN 55402; 612/333-4220, fax 612/332-3833.

■ The Virtual Education Foundation

Computer technology holds two great promises for education. First, the personal computer itself offers a platform for rich interactive learning experiences. Second, the great promise of computer technology is for the delivery of learning experiences to any location at any time. Robust communication tools now make possible significant human interaction among learners and between learners and their teachers.

Computers are a powerful tool but they are only a tool that empowers. Actual education comes from the creative use of such a tool. Since it is teachers who pursue these purposes, and it is typically courses that embody a teacher's educational vision, the Paul G. Allen outstanding online course award will be made to the teacher or instructional team responsible for the winning course. The award recognizes creativity in the use of computer technology and will support further development of online education through the purchase of equipment, training, creative services, and the like.

To be eligible for consideration, a course must meet the following criteria.

1. The course must be developed and offered by an accredited degree-granting educational institution.
2. The course must have been offered at least once and must have been completed by at least 15 students by the time the entry is submitted. This excludes courses that are still just prototypes.
3. The course need not be offered for academic credit but must offer sufficient content and learning activity to qualify as a legitimate academic course, i.e., there must be some type of formal assessment of students' learning.
4. The course may be in any subject or discipline.
5. The course must be a distance learning course, delivered online, that can be satisfactorily completed without classroom attendance, excluding proctored examinations.
6. Delivery of course content by other means (i.e., video tape, textbook, CD-ROM) is permissible so long as the network environment remains the principal environment for teaching and learning.
7. The fact that a course was developed with external financial support or under a contract to an external agency shall not affect eligibility.

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Enter the contest by submitting a brief written statement containing the following: 1) name of the course; 2) name of the institution hosting the course; 3) name, professional title, e-mail address, and phone number of the developer of the course; 4) a brief description of the instructional goals of the course; 5) who is the course for and what are they supposed to get from it? 6) a brief description of the format and structure of the course; 7) what instructional activities does the course involve and how are those activities completed by students? 8) a brief description of the assessment criteria used to evaluate the course and a summary of any assessment data collected to date; 9) a URL address where course materials can be accessed (if password access is required, please supply a password to be used by the judges); and 10) If online samples of student work or activity are available (i.e., discussion archives), please provide these. Do not provide access to grades or other student records.

Entries must be received no later than Friday, **April 24, 1998**. Submit the entry by e-mail to virtualed@paulallen.com. Include the words "course award" in the subject of your message. If attaching a separate document, use rich text format (.rtf) only.

■ Environmental Protection Agency Environmental Monitoring for Public Access and Community Tracking

The Environmental Protection Agency (EPA) will award approximately \$3.5 million in grants to establish pilot programs as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. The new initiative is designed to provide public access to clear, understandable, timely, and accurate environmental monitoring data in at least 85 of the larger U.S. metropolitan areas, in all 50 states. The pilot projects will be developed through partnerships among state, local and tribal governments, universities, not-for-profit organizations, and the private sector.

Environmental monitoring consists of systematic measurements, evaluations, and communication of physical, chemical, and biological information. Information on environmental conditions will assist the public in day-to-day decision-making concerning health and the environment.

The application deadline is **May 15, 1998**. Copies of the application may be obtained by accessing <http://es.epa.gov/ncerqa/rfa/empact.html>.

■ United States Information Agency Multi-Regional Project for International Visitors: Ethics in Government and Business

The Office of International Visitors of the United States Information Agency's Bureau of Educational and Cultural Affairs announces an open competition for an assistance award. Eligible organizations may apply to develop a multiregional group of international visitors traveling in the United States for 24 days. The group will be comprised of 12 to 30 American embassy contacts (English speaking) consisting of government officials, business leaders, politicians, civic and community leaders, journalists, and educators.

This program will provide a venue for participants to discuss the meaning and implications of ethical standards and how they are defined, monitored, and enforced. Topics for discussion will include the common ethical values that underlie democratic systems, comparison of administrative structures of ethics programs and the implementation of ethics laws and codes of conduct (e.g., financial disclosure systems, education of employees, methods of enforcement, resolution of conflicts of interest). Through visits with representatives from private industry, participants will explore the link between government and business to discover how this relationship can support democratic values.

Applications must be received by **May 19, 1998**. For further information contact Susan Lockwood, 202/619-6889, fax 202/205-0792. To download a solicitation package go to <http://www.usia.gov/education/rfps>.

■ Consortium for Plasma Sciences

The Consortium for Plasma Sciences is looking for research projects that will ensure the safety of blood plasma and plasma derivatives. Projects should focus on innovative methods to eradicate nonenveloped viruses in whole human plasma without affecting the functionality of the plasma or derivatives. Proposals will be evaluated on technical merit and the strength of their business case. Applicants must be able to make the rights to resulting research available to the consortium.

The consortium was formed by Alpha Therapeutic, Baxter Healthcare, Bayer, Centeon, LLC, and NABI. Its mission is to enhance the safety of blood and blood products through "methods for inactivating and removing pathogens, focusing on initial sterilization techniques." For more information on the consortium and its funding program, go to <http://www.plasmaconsortium.com>.

■ Administration for Children and Families Head Start

The Administration for Children and Families announces the availability of funds for two priority areas—University-Head Start Partnerships and Head Start Research Scholars—to support research activities in the areas of infant and toddler development within the cultural context, the promotion of mental health in Head Start and Early Head Start, or field-initiated research areas which will increase knowledge about low-income children's development for the purpose of improving services, or have significant policy implications.

The deadline for receipt of applications is **May 5, 1998**. Applications, including all necessary forms, may be downloaded from <http://www.acf.dhhs.gov/programs/hsb>. The web site also contains a listing of Head Start and Early Head Start programs. Hard copies may be obtained by sending an e-mail to hsresearch@dakota-tech.com. For further information contact Head Start Research Support Center, 11320 Random Hills Road, Suite 105, Fairfax, VA 22030; 703/218-2480.

■ National Institutes of Health NIGMS

The National Institute of General Medical Science (NIGMS), part of the National Institutes of Health, announces a new program to support quantitative approaches to the study of complex biological processes. The agency will provide *supplements to existing NIGMS grants* to foster the development of cross-disciplinary collaborations.

Examples of supported research provided by NIGMS include modeling and simulation approaches for the analysis of genetic regulatory circuitry, the development of techniques to obtain complex kinetic data from living cells, methods to study the dynamics of cellular substructure assembly, and approaches to analyzing complex physiological interactions of clinical significance.

Applicants may request funds to support the salary and expenses of collaborating investigators such as physicists, engineers, mathematicians, and other experts with quantitative skills relevant to the analysis of complex systems.

Details on the program are published in the *NIH Guide for Grants and Contracts*, PA-98-024. Additional information may be found at <http://www.nih.gov/nigms/funding/pa/comsupp.html>.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1998	381	\$91,637,630
Awards Processed		
February 1998	233	27,918,253
Proposals Submitted		
July 1997 - February 1998	2,706	547,060,625
Awards Processed		
July 1997 - February 1998	1,963	224,964,956
Proposals Submitted		
July 1996 - February 1997	2,615	394,698,452
Awards Processed		
July 1996 - February 1997	1,949	227,853,821

Purchase of Cryo-System

Stanley L. Erlandsen, Cell Biology and Neuroanatomy
 NIH, NCRR
 \$286,148 - 2/1/98-1/31/99

Laser Confocal Imaging of Opioid Peptides and Receptors

Robert P. Elde, Cell Biology and Neuroanatomy
 NIH, NIDA
 \$262,531 - 12/15/97-11/30/98

Screening Procedure for Identification of Subjects for Participating in a Pilot Dose-Ranging Study of the Safety and Efficacy of SCH-58235 Compared to Placebo and Lovastatin in Patients with Primary Cholesteremia

Donald B. Hunninghake, Pharmacology
 Larry W. Kotek, Medicine
 Schering-Plough Corp.
 \$119,520 - 8/6/97-12/31/97

Regulation of the Cyclic ADP-Ribose Signaling System

Timothy F. Walseth, Pharmacology
 Minnesota Medical Foundation
 \$11,630 - 2/1/98-1/31/99

Upgrade Model 373 DNA Sequencer

Eric D. Eccleston, Jr., Human Genetics
 Minnesota Medical Foundation
 \$20,000 - 2/1/98-1/31/99

Perfusion and Energy Metabolism in Collateralized Myocardium

Robert J. Bache, Medicine
 NIH, NHLBI
 \$295,832 - 1/1/98-12/31/98

Ambisome vs Abelcet in Empirical Treatment of Febrile Neutropenia

Jesse L. Goodman, Medicine
 Fujisawa USA, Inc.
 \$175,000 - 8/1/97-7/31/99

Virulence of a Lineage of Uropathogenic *Escherichia coli*

James R. Johnson, Medicine
 NIH, NIDDK
 \$141,411 - 9/15/97-8/31/98

Encoding Movement Kinematics in the Premotor Cortex

Timothy Ebner, Neurosurgery
 NIH, NINDS
 \$193,273 - 1/23/98-12/31/98

Acute Effects of Estrogen on Potassium Currents in Isolated Ventricular Myocytes

Scott Sakaguchi, Medicine
 Council for Tobacco Research.
 \$50,000 - 7/1/97-6/30/98

Skin Biopsy and Blister: New Methods to Study Neuropathy

William R. Kennedy, Neurology
 NIH, NINDS
 \$595,993 - 9/5/97-9/4/98

Citicoline's Effects on the Lesion Volume in Acute Stroke

Arthur C. Klassen, Neurology
 Interneuron Pharmaceuticals, Inc.
 \$208,134 - 7/15/97-2/28/98

BMS-203522 Cream in Women with Excessive Facial Hair Growth

Maria K. Hordinsky, Dermatology
 Bristol-Myers Squibb Pharmaceutical Research Institute
 \$137,941 - 8/6/97-4/5/98

Effect of Low Doses of Finasteride on Male Pattern Baldness

Maria K. Hordinsky, Dermatology
 Merck
 \$31,808 - 5/1/97-10/31/98

Neural Antigen Influence on T Cell Repertoire Selection

Dale S. Gregerson, Ophthalmology
 Minnesota Medical Foundation
 \$11,000 - 2/1/98-1/31/99

Auditory Analysis and Sensorineural Hearing Loss

David A. Nelson, Otolaryngology
 NIH, NIDCD
 \$346,571 - 12/1/97-11/30/98

In Vivo Blockade of Naive and Memory T Cell Responses

Bruce Blazar, Pediatrics
 Dana-Farber Cancer Institute
 \$138,465 - 7/1/97-7/31/98

Pneumococcal-Protein D Vaccine Evaluation in Chinchillas

G. Scott Giebink, Pediatrics
 Smithkline Beecham Pharmaceuticals
 \$113,105 - 8/1/97-7/31/98

Diabetes Prevention Trial

David M. Brown, Pediatrics
 American Diabetes Association, Inc.
 \$30,000 - 11/1/97-10/31/98

Laboratory Analysis for the National Health and Nutrition Examination

Blanche M. Chavers, Pediatrics
 Centers for Disease Control
 \$13,660 - 1/15/98-1/14/99

The Role of Synaptic Proteins in Schizophrenia

S. H. Fatemi, Psychiatry
 Minnesota Medical Foundation
 \$10,000 - 3/1/98-2/28/99

Bioenergetic Studies of Remodeled Myocardium

Kamil Ugurbil, Radiology
 NIH, NHLBI
 \$289,469 - 1/1/98-12/31/98

Fit Long-Term Extension (FLEX)

Kristine Ensrud, Medicine
 Merck
 \$1,219,594 - 1/3/98-10/30/03

Hierarchical Modeling of AIDS Clinical Trials Data
Bradley P. Carlin, Biostatistics
NIH, NIAID
\$111,449 - 12/1/97-11/30/98

Colorectal Cancer Family Registry
Jack S. Mandel, Environmental and Occupational Health
Richard A. King, Medicine
University of Southern California
\$160,309 - 9/1/97-7/31/98

Wood Dust Intervention for Small Business
Lisa M. Brosseau, Environmental and Occupational Health
St. of Minn., Department of Health
\$25,896 - 10/1/97-9/30/98

Epidemiology of Venous Thrombosis and Pulmonary Embolism
Aaron Folsom, Epidemiology
NIH, NHLBI
\$324,546 - 2/1/98-1/31/99

Study to Evaluate the Renal Protective Effects of Lasartan in Patients with Non-Insulin Dependent Diabetes Mellitus and Nephropathy
Richard S. Crow, Epidemiology
Merck
\$202,478 - 9/1/97-8/31/02

Women's Preferences for Type of Breast Cancer Surgery
Deann Lazovich, Epidemiology
Minnesota Medical Foundation
\$25,000 - 1/1/98-12/13/98

Pediatric AIDS Pharmacology Laboratory
Courtney Fletcher, Pharmacy Practice
Rory P. Remmel, Medicinal Chemistry
Social and Scientific Systems, Inc.
\$153,976 - 3/1/97-2/28/01

Development of an Expressed Sequence Tag (EST) and High-Resolution Comprehensive Map for Swine
Craig W. Beattie, Veterinary Pathobiology
Leeson Alexander, Veterinary Pathobiology
Mark S. Rutherford, Veterinary Pathobiology
Biotechnology Research and Development Corp.
\$420,787 - 12/1/97-11/30/99

Toward Clinical Applications of UM Bioartificial Liver
Wei-Shou Hu, Chemical Engineering and Materials Science
Greg J. Beilman, Surgery
Frank B. Cerra, Surgery
Sota Tec Fund
\$200,000 - 1/1/98-12/31/98

Automatic Passenger Counting in the High-Occupancy Vehicle Lane
Nikolaos Papanikolopoulos, Computer Science and Engineering
St. of Minn., Department of Transportation
\$164,160 - 03/23/98-06/30/99

Hierarchical Modeling of AIDS Clinical Trials Data
Bradley P. Carlin, Biostatistics
NIH, NIAID
\$310,956 - 12/01/97-11/30/00

Risk-Focused Prevention of Drug Abuse in Aggressive Youth
Gerald J. August, Psychiatry
NIH, NIDA
\$2,068,000 - 03/01/98-02/28-03

Evaluation of Water Flow Through Pavement Systems
Bjorn Birgisson, Civil Engineering
David E. Newcomb, Civil Engineering
St. of Minn., Department of Transportation
\$55,000 - 1/2/98-3/31/98

Performance Evaluation of Automatic Target Recognition System
Nikolaos Papanikolopoulos, Computer Science and Engineering
Honeywell, Inc.
\$30,000 - 1/1/98-12/31/98

High-Resolution Scanning Cathodoluminescence
Philip I. Cohen, Electrical Engineering
USDoD, Navy
\$108,927 - 3/2/98-3/1/99

Intelligent Visual Grouping
Allen Tannenbaum, Electrical Engineering
Guillermo Sapiro, Electrical Engineering
New York University
\$100,796 - 10/1/97-9/30/98

Iron Oxide and Sulfide Mineral Particles as Biomarkers
Bruce M. Moskowitz, Geology and Geophysics
California Polytechnic State University Foundation
\$39,878 - 8/1/97-7/31/00

Edge Cooling Heat Transfer on Turbine Blades
Richard J. Goldstein, Mechanical Engineering
Ernest G. Eckert, Mechanical Engineering
Suhas V. Patankar, Mechanical Engineering
Clemson University
\$200,000 - 2/1/98-1/31/99

Composition of Freshly Nucleated, Ultrafine Particles
Peter H. McMurry, Mechanical Engineering
U.S. Department of Energy
\$187,826 - 1/15/98-1/14/99

Soy Based Diesel Fuel Study
David B. Kittelson, Mechanical Engineering
Robert W. Waytulonis, Mechanical Engineering
St. of Minn., Department of Agriculture
\$27,000 - 12/3/97-6/30/99

A Variable Temperature Ultra-High-Vacuum Scanning Tunneling Microscope (UHV/STM)
Allen M. Goldman, Physics and Astronomy
USDoD, Navy
\$198,541 - 3/28/98-6/30/99

Engineering of a Solid Scintillator Neutrino Detector
Keith Ruddick, Physics and Astronomy
Thomas R. Chase, Mechanical Engineering
Fermi National Accelerator Laboratory
\$103,853 - 10/1/97-3/10/98

Studies of Diffusion and Growth on Silicon Using an Atom Tracker and Hot Scanning Tunneling Microscope
Eric Ganz, Physics and Astronomy
National Science Foundation
\$90,001 - 1/1/98-12/31/98

Protein Diffusion and Interaction in Concentrated DNA Solution
Victor A. Bloomfield, Biochemistry (CBS)
National Science Foundation
\$110,000 - 1/15/98-12/31/98

Evaluating and Optimizing Alumina Plate Technology
Martin Blumenfeld, Genetics and Cell Biology
Sota Tec Fund
\$61,552 - 1/1/98-12/31/99

Design and Construction of *Deinococcus radiodurans* for Biodegradation of Organic Toxins and Radioactive Waste Sites
Lawrence P. Wackett, Biochemistry
Henry M. Jackson Foundation
\$114,388 - 12/1/97-9/14/98

World Society on the Eve of the Twenty-First Century

Allen F. Isaacman, History

John D. and Catherine T. MacArthur Foundation
\$925,919 - 3/1/97-2/28/00**Agricultural and Food Cooperatives' Role in a Changing Food System**Robert P. King, Applied Economics
Claudia Parliament, Applied EconomicsU.S. Department of Agriculture
\$108,000 - 2/1/98-1/31/03**Effects of New Soybean Production Practices on Soybean Cyst Nematode and Associated Soybean Yield Losses**Senyu Chen, Southern Agricultural Experiment Station, Waseca
Ward Stienstra, Plant PathologyUniversity of Missouri
\$30,575 - 4/1/97-3/31/98**An Innovative Non-Thermal Plasma System for Farm Odor Control**Rongsheng Ruan, Food Science and Nutrition (COAFES)
Philip R. Goodrich, Biosystems and Agricultural Engineering
Paul L. Chen, Food Science and Nutrition (COAFES)Sota Tec Fund
\$199,576 - 1/1/98-12/31/99**Assessing Macrophytes in Minnesota's Game Lakes**

Raymond M. Newman, Fisheries and Wildlife

St. of Minn., Department of Natural Resources
\$50,000 - 5/1/97-6/30/98**Enhancing Remote Sensing Research and Education at the University of Minnesota**Marvin E. Bauer, Forest Resources
Paul Bolstad, Forest Resources
James C. Bell, Soil, Water, and ClimateNational Aeronautics and Space Administration
\$199,604 - 12/1/97-11/30/98**Environmental Quality Incentives Program**

James L. Anderson, Soil, Water, and Climate

U.S. Department of Agriculture
\$259,200 - 9/24/97-9/30/98**Pathways from the Classroom to Credentials**K. Charlie Lakin, Educational Psychology
Amy Hewitt, Institute on Community IntegrationHuman Services Research Institute
\$60,000 - 9/22/97-9/21/98**Tools for Teaching and Assessing Statistical Interference**Joan B. Garfield, General College
Robert Delmas, General CollegeNational Science Foundation
\$100,021 - 2/1/98-10/31/99**Evaluation of the Statistics Reform**

Joan B. Garfield, General College

National Science Foundation
\$95,471 - 2/1/98-1/31/00**African American Adoption Program (AAAP) Evaluation**Carolyn Tubbs, Family Social Science
Harold D. Grotevant, Family Social ScienceRamsey County
\$11,451 - 11/18/97-6/30/98**Establishing Area Training Centers**

Nan L. Kalke, Social Work

St. of Minn., Department of Human Services
\$1,033,680 - 9/2/97-6/30/99**Minneapolis Pathways**

Sharon Tolbert-Glover, Humphrey Institute

Ford Foundation
\$280,000 - 1/1/98-12/31/98**Phase 1 of Hollman Evaluation**

Edward Goetz, Design, Housing, and Apparel

Family Housing Fund
\$2,550 - 12/15/97-3/15/98**Conversion of R/V Blue Heron**

Thomas C. Johnson, Large Lake Observatory

National Science Foundation
\$214,736 - 2/15/98-12/31/99**The Role of the Estrogen Receptor Alpha in Estrogen Effects**

Merry Jo Oursler, Biology, Duluth

Duluth Clinic, Ltd.
\$9,820 - 1/1/98-12/31/98**Habitat Health Services**

Barbara A. Elliott, Medicine, Duluth

Duluth-Superior Area Community Foundation
\$12,363 - 1/1/98-12/31/98**Equipment Purchase to Establish a Modern Digital Microscopy Workstation**

George J. Trachte, Pharmacology, Duluth

Minnesota Medical Foundation
\$20,000 - 2/1/98-1/31/99**Sediment-Hosted Zinc Potential of Early Proterozoic Rocks**

Mark Severson, Natural Resources Research Institute, Duluth

Steven A. Hauck, Natural Resources Research Institute, Duluth
St. of Minn., Department of Natural Resources
\$75,000 - 12/18/97-6/30/99**Weakening of Taconite in Small-Scale Explosive Tests**

Harlen B. Niles, Natural Resources Research Institute, Duluth

St. of Minn., Department of Natural Resources
\$58,400 - 1/1/98-6/30/99**Mapping Kaolin Potential in the Minnesota River Valley**

Steven A. Hauck, Natural Resources Research Institute, Duluth

Lawrence M. Zanko, Natural Resources Research Institute, Duluth
St. of Minn., Department of Natural Resources
\$32,000 - 1/26/98-11/30/98**Metals and Mercury Balance**

John Engesser, Natural Resources Research Institute, Duluth

Evtac Mines
\$10,760 - 12/11/97-12/31/97**Training for Multimedia/Geographical Information System Applications in Mine Permitting**

Lawrence M. Zanko, Natural Resources Research Institute, Duluth

Shiely Masonry Products
\$10,000 - 7/1/97-6/30/98**Bedrock and Glacial Drift Mapping for Volcanic Massive Sulfides and Lode Gold Alteration in the Vermillion-Big Fork Greenstone Belt**

Ronald L. Morton, Geology, Duluth

Howard Mooers, Geology and Geophysics
St. of Minn., Department of Natural Resources
\$42,000 - 1/1/98-8/31/98**Preparing Teaching Assistants to Teach: Training TAs to Pass on their Disciplines**

Janelle Wilson, Natural Resources Research Institute, Duluth

National Foundation for the Improvement of Education
\$1,000 - 1/1/98-12/31/98**Field Studies of Deformed Amphibians in Minnesota**

David M. Hoppe, Biology, Morris

Environmental Protection Agency
\$25,000 - 8/15/97-7/15/98

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>
 EGMS Help Line 612/625-1888

	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration , information 624-5599			spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Tove Jespersen	624-0061	tove@ortta.umn.edu
Assistant Director	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
NIH, USDE, CDC, FDA, HRSA, DHHS	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Foundations, DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Foundations, DHHS	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
USDA, DOJ, HUD (contracts only); USIA, AID, USDE, DHHS	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
USDA, DOJ, HUD (grants only); DHHS	Karen Sachi	626-0270	karen@ortta.umn.edu
NASA, DOD (AF, Army); misc federal (contracts only); DHHS	Virginia Olson	624-0288	ginny@ortta.umn.edu
DOD (Navy); misc federal (grants only); DHHS	TBA	625-1359	@ortta.umn.edu
USDA (contracts only); USDE, NIH, HRSA, FDA, CDC, DHHS	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
USDA (grants only); DHHS	Doug Johnson	624-4121	doug@ortta.umn.edu
Assistant Director	Todd Morrison	624-5066	todd@ortta.umn.edu
MN Technology, MN Health, NSF, VA	Todd Morrison	624-5066	todd@ortta.umn.edu
NSF	Launa Shun	624-2521	launa@ortta.umn.edu
NSF	Sandy Kenyon	624-9567	sandy@ortta.umn.edu
Ag. associations, other private	Kate Tennessen	626-7718	kate@ortta.umn.edu
Voluntary health	Liz Li	624-0810	liz-l@ortta.umn.edu
St of MN, governments	Amy Levine	626-7441	amy-l@ortta.umn.edu
St of MN, governments	Tracy McClun	626-8265	tracy@ortta.umn.edu
Business and industry, Medical School	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Business and industry, Medical School	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Business and industry, health sciences	Gary Gillet	624-5571	gary@ortta.umn.edu
Patents and Technology Marketing , information 624-0550, fax 624-6554 ..			ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	TBA		
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	
Effort help line		625-7824	
Information Services			
Administrator	Mary Cybyske	624-6085	mary-c@ortta.umn.edu
Duluth, Office of Research & Technology Transfer			
Sr. grant and contract administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Morris, Grants Development , http://www.mrs.umn.edu/services/grants			
Director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
	<u>related numbers</u>		
Sponsored Financial Reporting , fax 626-0321			
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of MN	Dan Hemauer	624-5007	dan-h@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Kerry Marsolek	624-8053	kerry@ortta.umn.edu
Supervisor, NIH, USDE	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs , fax 626-6061			
Director	Moira Keane	626-5654	irb@umn.edu iacuc@umn.edu

Mailing List Changes

**ORTTA cannot change the faculty mailing list.
It is generated by the Staff Demographics office.**

For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

For changes regarding other labels, please complete the following:

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RESEARCH REVIEW

Office of Research and Technology Transfer

May 1998

UM Inventions Spur \$1.7 Billion in Private Investment

Carlson School research team surveys the "hidden" economic activity that precedes the sale of finished products

Inventions by UM faculty inspired 91 private companies to invest \$1.7 billion in product development since 1986, and to employ the equivalent of 524 people full time each year.

Of that investment, \$1 in \$104 came back to the University as license fees and royalties—\$16.2 million total.

From fall 1986 through last December, 91 companies held exclusive licenses to UM-invented technologies—ranging from semiconductors, to industrial materials made of agricultural waste, to mice that suffer Alzheimer's disease. To turn those technologies into marketable products, and market and manufacture them, each company invested an average of \$4.16 million for each year of each license—and that's *before* any sale of the resulting products.

In Minnesota, 48 companies invested \$435 million from '86 through '97, an average of \$1.9 million for each license-year, and in the process they employed an average of 225 people full-time for each of 11 years.

Most of the investment nationwide came from 19 large (over 500 employees) biotechnology companies—\$1.14 billion, or 68 percent of the total. Most of the jobs were in 7 large companies associated with the physical sciences (computers and medical devices, for example); they invested 3,229 of the employee-years, 55 percent of the total.

In Minnesota, large companies provided almost three-quarters of the investment and the jobs—\$310 million and 1,720 employee-years. Physical-science companies of all sizes pro-

Investment in U of M Technology by 91 Private Companies

1986-1997:

\$1,678,000,000

and the equivalent of

**524 full-time jobs
for 11 years**

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 11

May 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

New rates effective July 1, 1998

TA, RA, AF: standard	\$6.64/hr	+ 8.7%
TA, RA, AF: advanced master's or Ph.D.	\$1.16/hr	+ 8.7%
Summer quarter TA, RA, AF	—	8.7%
Summer session TA, with tuition	\$12.44/hr	+ 8.7%
Summer session TA, without tuition	—	8.7%
Professional program assistant	—	8.7%
Dental fellow *	\$4.04/hr	—
Medical fellow *	\$3.32/hr	—

To the rates listed above, add 7.7% when a graduate student is enrolled for fewer than 4 credits, or less than 1 credit for advanced master's students and Ph.D. candidates. How this new rule applies to summer terms is not yet clear, however. This charge is for Social Security (6.2%) and Medicare (1.5%).

* The additional 7.7% is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.32/hr + 7.7%.

For more information about GA job classes and fringe rates, contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	25.6%	27.1%	13.9%
7/1/99 - 6/30/00	27.6%	27.5%	14.3%

Fringe benefit rates are determined by the University's Office of Budget and Finance; call Robin Dittmann, 612/626-9277.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Biotechnology Needs Public Leadership

This University Must and Will Lead in Biotechnology Research, Says Mike Martin

Adapted from Martin's March 31 speech to the Biological Process Technology Institute (BPTI). Martin is UM's acting vice president for agricultural policy.

Austen Cargill, of the Cargill, Inc. family, is right when he says that agricultural biotechnology will be one of the most profound revolutions in the history of modern civilization. In my lifetime, if I can hang on a while longer, and definitely in your lifetime, you will see the greatest revolution in the way human beings relate to their environment that's ever occurred, largely because of agricultural biotechnology.

I am going to talk about seven things very quickly: Production implications; implications with respect to the environment; the structural changes in agriculture and agribusiness; legal and ethical questions; international trade issues; and finally, public research in biotechnology.

Already biotechnology has changed this one fundamental reality about agriculture: Until the 1960s, the binding constraint was land, and the value of land was *the* measure of growth and success. Since then, the binding constraint has been management. It's no longer the land that makes the difference; it's whether or not managers can take complex scientific relationships and natural resources and bring them together.

In Minnesota, agriculture makes up about 28 per cent of the economic base. There are about 468,000 agriculture-related jobs in the state, 37 per cent of them in the seven-county metro area. This is a statewide enterprise that's changing profoundly as a result of the changing science.

Minnesota grew 6.9 million acres of soybeans last year. Last year UM introduced a soybean specifically for the production of tofu for the Japanese market. The millers told our breeder, Jim Orf in Agronomy and Plant Genetics, that it would be a little better for them if the bean could be just a little bit bigger. Jim, a good biotechnologist, said, "for enough money I'll make 'em the size of basketballs."

We've acquired the rights to Monsanto's "Roundup-ready" gene: You put the gene into a crop plant, plant the plant, blast the area with the weed-killer Roundup, and everything dies but the crop. In southern Minnesota, they raised a lot of Roundup-ready soybeans last year, and we're working on Roundup-ready turf grass, Roundup-ready canola, and perhaps Roundup-ready barley.

That brings us to the environmental impact. Larry Wackett in Biochemistry and Mike Sadowsky in Soil, Water, and Climate have demonstrated the engineering of microbes and enzymes to break down the herbicide atrazine in the soil. We're also working on a variety of reed canarygrass that takes up nitrogen in large

amounts. You plant it along riparian zones where too much nitrogen comes off the fields and the grass takes up the nitrogen before it pollutes the river. Then you mow off the reed canarygrass, mash it into pellets, and feed it to the cows. So it changes the cycle, and it has huge implications.

The environmental opportunities are incredible.

But let's talk a little bit about structural change in agriculture. This is highly contentious—the disappearance of the small family farm and its replacement by the factory farm. There is concern that the addition of new technologies leads to consolidation of farms into larger and larger units. And there is concern that this is remaking the demographic, social, and cultural landscape. We have to address those issues. But that should not mean we roll back science.

In fact, biotechnologies may actually reverse the trend. If we can produce biotechnology-determined, identity-preserved products, like the soybean for tofu, small-scale producers may be able to earn a premium by producing a very specific product. In Oregon, two of my former stu-

{next page}



UM has acquired the rights to Monsanto's "Roundup-ready" gene. We're working on Roundup-ready turf grass and Roundup-ready canola.

The Year 2000 and the Researcher

The Millenium Will Come to All Kinds of Machines, Not Just Mainframes

Most of the ill effects of the year 2000 concern mainframe computer systems, but some decidedly non-mainframe things—lab electronics, research databases, network servers—could also be affected. These close-to-home aspects to the millennium bug are of interest to University staff and faculty.

First, let's define the problem: Simply stated, some electronic technology will not work before, during, or after the date rollover to the year 2000. It's a result of a bad habit—the bad habit of using two digits instead of four to represent the year. After all, two digits is simpler and the practice saved precious storage space in the early days of computing. Few programmers thought their systems would last as long as they did. But when we hit the year 2000, a date manipulation (e.g. "00" minus "98") will confuse most software programs.

So what's affected? That's the tricky part—we can't say for certain. But we know that any electronic device that keeps track of and manipulates a date could be affected. This covers a lot of territory: computers of all sorts, from your desktop machine to your network server; infrastructure, such as fire alarms and traffic lights; research equipment that keeps track of dates; software programs for any of the above; office equip-

ment; and on and on. Enough to give anyone a migraine.

It's a good news/bad news joke. The good news is that only a small percentage of the world's (and the University's) technology is affected. The bad news is that we don't know an easy way to find the affected parts. So what should you do? If staff and time are available, do a complete inventory of all your technology, and systematically test and fix everything. Otherwise—prioritize. Select the technology that absolutely must not fail and concentrate there first. Check with the manufacturer, test the technology, and fix or upgrade it as necessary.

An important thing to remember is that date information needs to be both present and manipulated to be of concern. A two-digit year present in the data and printed out, but not manipulated, is not usually a problem. However, if age, or the number of days from today, or the expected date of recurrence is calculated from the two-digit data element, there could be a year-2000 problem. For programmers, there are ways to get around this by "windowing" the date, and other techniques. For further information, see the Office of Information Technology web site at <http://www.umn.edu/oit/year2000>.

by Kenn Hanna, OIT

Biotechnology

(continued from previous page)

dents are the world's biggest producers of organic baby food, and they've contracted with little farmers to grow specific products for their business. They have actually expanded the number of small farms, because they went with identity-preserved, very specific quality, non-commodity-oriented agriculture.

More frightening to me is the "oligopoly-zation" of biotechnology—an industry structure where there are so few participants that they can get together and collude, they can set prices and keep things off the market. Agricultural biotechnology has boiled down to just a couple companies: Mycogen Seeds is tied to Dow. Pioneer Hi-Bred is allied with DuPont. Novartis was the product of marriage between Sandoz and Ciba. We're getting down to too small a number, in some people's minds, to be comfortable with their willingness to do what is socially right. That, I will tell you, is a serious concern.

On the other side, it gives these companies enormous economies in R&D. The benefit of Monsanto having bought Searle pharmaceuticals is enormous scientific power. They can take huge risks.

There are also legal implications. When we made the deal with Monsanto for the Roundup-ready gene, it took the scientists thirty minutes on the phone to agree on what to do. It took the attorneys eighteen months to write the contract. (And then I asked how does the gene arrive? Do they fly it in? Should I greet it at the airport?) There's very little expertise within the legal profession on this topic, and little case law. The question we always have is how can a company own a form of life? The reality is, again, that the big companies have the legal as well as economic muscle. These serious ethical considerations we have to understand.

International trade implications are also fairly profound. The Europeans have yet to accept genetic manipulated organisms. We are in a huge legal fight with the European community over that. Already the Europeans have had the World Trade Organization rule against them twice. If the Europeans cave in and accept GMOs, they'll be overwhelmed by the U.S., which is much further advanced scientifically—which means that trade barriers will have to be even more rigid to protect their domestic

(next page)

Agricultural biotechnology has boiled down to just a couple companies.

If there isn't a public offset to this huge private buildup there may be no objectivity.

producers. This is going to be a serious strain as time goes by.

Let me finally turn to university research issues. The public sector, the land-grant university, must remain involved in biotechnology. We have, in some respects, no choice. If there isn't a public-sector offset to this huge private-sector buildup, there may be no objectivity in the debate.

But I will tell you this. It is damned expensive—damned expensive! It has dramatically changed the economics of higher education. The cost of hanging on to a good scientist is high, and the cost of outfitting these folks is unbelievable. In earlier days, a startup package for a new faculty member, to start up a lab or whatever, may have averaged fifty grand. Now it can average a quarter of a million dollars, and that's just for starters.

So you have to change the way you manage and administer and fund a major university. We know we must remain present. We know we must do business differently. We know we must have the BPTIs and others to link us with the private sector. We know we need to license and patent some of our own inventions to generate income. We know all those things. We just don't know how. And we're going to have to learn very quickly if we're going to stay on top of this thing.

It is going to happen at such a rapid pace that universities that do not stay at the cutting edge will disappear. There are fifty-seven 1862-land-grant universities around the country. There's going to end up being 9 to 12 big-time players, and another 10 to 14 regional partners in their orbits. The rest are going to be fine little places that don't do much science. It's as simple as that.

The University of Minnesota, I guarantee you, will be one of the 9. Of that there is no doubt. But how we get there is still to be determined.

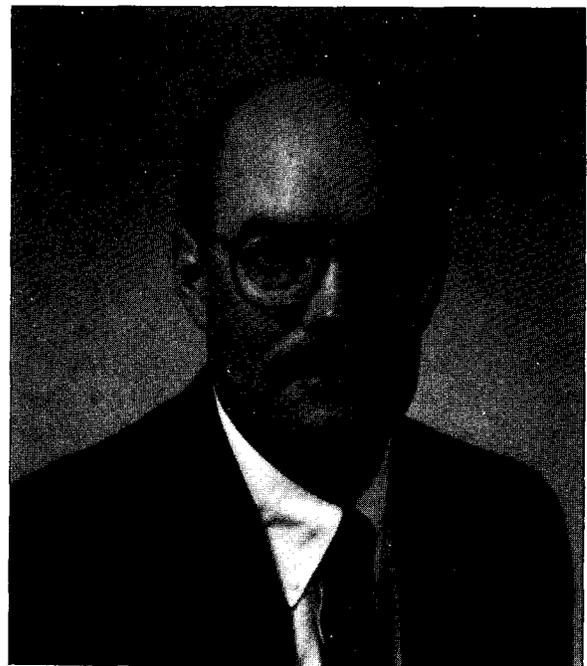
Having a medical complex, having the ag complex, in this community with major biotech firms, a major agricultural sector, and a major agribusiness sector, I guarantee will ensure us of being in the top 9. But it is going to be hard work, and it is going to be a hell of a challenge, and it is going

to cost a lot of money. But if we do not do it, we will have failed in our responsibility as a land-grant university, and we will have set society back.

My biggest single fear, quite frankly, is that the science of biotechnology is moving faster than the ability of our institutions to cope with it. And I don't mean just university institutions. I also mean legal institutions, social institutions, economic institutions. The science is out ahead of the people it serves, and we've got to find a way to bring those in sync. We've got to create an educated populace that understands biotechnology, we've got to create a management corps that can manage it, and we've got to create scientists who not only are scientifically sound, but ethically sound.

I believe we've got to put the philosophy back in the degree of doctor of philosophy. It's got to happen in the biotechnology areas, and it's got to happen now.

There are 57 land-grant universities. There's going to end up being 9 to 12 big-time players. The University of Minnesota, I guarantee you, will be one of the 9. But how we get there is still to be determined.
—Mike Martin



Electronic Grants Management System

Grants Management, the Expertise Database, and the Community of Science

The Electronic Grants Management System (EGMS) being developed at the University will include a multifunctional expertise database. The database grew out of the need to produce biosketch forms for grants to federal agencies, and now includes the ability to provide extracts that can be uploaded to the Community of Science (COS), a commercial database that can be viewed by any of the more than 200 universities and businesses that belong to COS. In addition, our local expertise database, which will contain more information than that found in COS, will be accessible by a world wide web front-end that will be in place within the next month.

Expertise Database You can access the Expertise Database from the EGMS web page—<http://egms.ortta.umn.edu>. After clicking on *Expertise Database*, you will need to logon using your x.500 ID and password, which will bring you a screen with three choices. You should click on *Create or Update your Expertise Database record*. The expertise database is comprised of 10 sections that allow you either to type the information directly into a form, or to cut and paste from an electronic version of your curriculum vitae. The sections are:

- Demographic (your name, university address, university telephone number, your e-mail address, etc.)
- Education
- Research interests and expertise (this section also includes the relevance of your expertise to industry and asks whether you would like to collaborate with industry)
- Your professional history (essentially the jobs that you have held over the years)
- Other support (grants that you hold and other types of support for your research)
- Memberships
- Publications
- Honors
- Patents
- Languages

Once your information is in the database you can create a biosketch form for federal grants by selecting the information you want to include. For NIH and NSF, the biosketch will be printed on the appropriate form when you print the grant forms prior to submission. You can also create an extract that can be uploaded to Community of Science, and you can browse its website at <http://www.cos.com>, to see for yourself how useful it is. COS offers access to the following services:

- COS Expertise Database
- Ei Compendex (database of abstracts and titles in the engineering sciences)
- AGRICOLA (for agriculture)
- GEOREF (for geology and geophysics)
- MEDLINE (this is not available to the University of Minnesota since we have access through the Biomedical Library)
- COS Funding Opportunities
- COS Funding Alert

In addition, you have access to the following databases:

- U.S. Patent Citation Database
- Federally Funded Research in the U.S.
- Commerce Business Daily
- Federal Register

COS offers a number of "alerting services" via e-mail. Of particular interest is the Funding Alert. Using keywords automatically assembled from your expertise database, COS will search for funding opportunities and will automatically notify you at whatever frequency you wish.

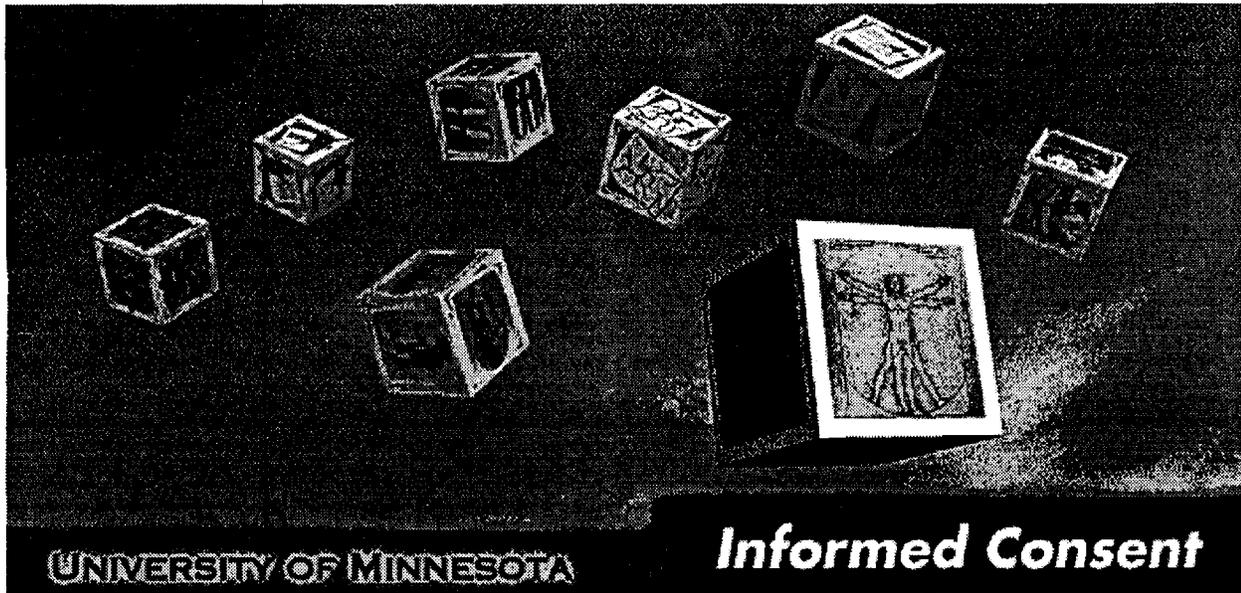
Some faculty may not want others to have access to their expertise information. In the University's expertise database you have the option of *not* allowing access to your data. The same is true in COS. However, even though your expertise database in COS may be hidden, you can still take advantage of the alert services COS offers.

Two interesting and useful services offered by COS are:

- Hyperlinks from your publications list to MedLine abstracts, so that others can get an idea what a paper is about
- From MedLine, automatic updates to your list of publications. All you have to do is reply to COS's e-mail which lists what it thinks are your publications (I urged that they be careful with the Johnsons and Andersons at the University of Minnesota!). By downloading these updated references into our local expertise database you will save time and effort in keeping our database current.

I hope that this has given you a taste of the usefulness and power of the expertise database. More detail will be coming in later issues of the *Research Review*.

by David W. Hamilton



www.research.umn.edu/consent

Research Subjects' Protection Programs

Web-Based Resource Helps Researchers Create Consent Documents

One of the more time-consuming but critical tasks in preparing applications for review by the IRB: Human Subjects Committee is creating the consent document. This document not only contains the information that will be given to potential subjects but also conveys to the IRB a sense of the communication process the research team will engage in with its subjects. Consequently the consent document comes under close scrutiny by the IRB for completeness, readability, and effectiveness.

Getting it right the first time is the most efficient approach, and the Research Subjects' Protection Programs staff has developed a new resource to help researchers in this effort. This web-based resource provides instructional material and a "performance support tool" for authoring a consent document. The instructional materials include information on the evolution of informed consent, the principles integral to the process, and the essential elements to be conveyed to research participants.

When you or a member of your research team is ready to author a consent document, the performance support tool splits the computer screen in half. The document is com-

posed in the upper half, while the lower half of the screen provides immediate access to the key elements for that particular section of the document, useful examples, and even a list of everyday words to substitute for our academic jargon. When the document is completed to your satisfaction, you e-mail it to yourself. Then copy it into your word processor, run it through your usual edits for readability, and attach it to your application. You don't have to complete the document at once, and you can have multiple consent documents in development simultaneously. We'll keep them on our server, and remind you from time to time that we're holding a draft for you.

You can find this resource at <http://www.research.umn.edu/consent>, or from the RSPP web site at <http://www.research.umn.edu/subjects>, select *Informed Consent Tutorial* from the IRB menu.

This is a "first cut," so if you have any suggestions to help us improve the site, either in content or function, please send them to IRB@umn.edu, or RschTrng@umn.edu. Happy authoring.

by Moira Keane, director, RSPP

Expanded Uses for NSF FastLane

FastLane, NSF's web-based information system, not only allows for electronic submission of proposals, it also allows institutions to notify NSF or request approval for many common project changes.

Notify NSF of:

- First no-cost extensions, up to one year
- Significant changes in methods or procedures*
- Significant changes or delays or unusual events (other than changes in objectives or scope)
- Short-term absence of PI or PD (less than three months)*
- Anticipated residual funds in excess of \$5000 or 5%
- Conflicts of interest which cannot be satisfactorily managed

* For these two items, go directly to NSF; the documents are not reviewed or endorsed by ORTTA.

Request NSF approval for:

- NSF approved no-cost extensions
- Changes in objective or scope
- Long-term absence of the PI or PD (over three months)
- Significant change in PI or PD effort (greater than 25% of the original proposed effort)
- Withdrawal of PI or co-PI
- Pre-award costs incurred more than 90 days before a grant's starting date
- Rebudgeting of participant or trainee support costs
- Rearrangement or alteration costs over \$10,000
- Request to change the effective start date

How to Use These Features

PIs will initiate the notification or request in FastLane, which will require that they have a FastLane PIN number. If you don't have a PIN number, you can obtain one by contacting ORTTA at 612/624-9004.

- Start at the FastLane home page: <http://www.fastlane.nsf.gov/>.
- Scroll down to PI/co-PI functions, and click on *Notifications & Requests*.
- Enter the NSF award number and the PI's last name and PIN in the boxes.
- Select the appropriate notification or request by clicking in the circle on the left, then click on the *go to* bar.
- Complete the information fields.
- Use the "Word Wrap" button! FastLane responds by e-mail. If word wrap isn't used it's difficult to get a complete copy of the NSF response.

- Click on the submit button to send the request to ORTTA ("SPO" in FastLane lingo)

About the Information Fields

All notifications or requests require the PI or PD to provide a justification to be evaluated by NSF program and administrative staff. As with the current paper process, the PI or PD must provide the scientific explanation and justification for the needed change. The information must be entered under the PI's FastLane PIN number either by the PI directly, or by someone the PI has authorized to use her or his PIN. *Administrators and support staff are not qualified to make these statements.* For the sake of efficiency, a PI can authorize someone to use her or his PIN to enter information into FastLane, but the justifications must come from the PI.

Review and Endorsement by ORTTA

When NSF requires that notifications and requests be endorsed by the institution, ORTTA has been delegated that responsibility by the U of M Board of Regents. Each notification or request will be reviewed by a grant administrator before being submitted to NSF. In some cases, we may have to call a PI to ask for clarification, or to discuss suggested changes. The system won't allow ORTTA to return the document to the PI for changes, so any editing will be done by ORTTA staff in conjunction with the PI. In no case will notifications or requests be endorsed if they are incomplete or don't provide an adequate justification.

It is *never* acceptable to justify a change merely for the purpose of using up an anticipated balance. NSF isn't shy about reminding people of this on its input screens. ORTTA will have to return requests that use this as a justification, or even hint that this may be the reason.

PI Notifications

PIs who have entered their PI information, including e-mail address, via the FastLane proposal system, will get an e-mail copy of confirmation or approval from the system. Otherwise, PIs will be notified of critical changes by a revised University Notice of Grant or Contract Award.

If you have trouble using this feature, contact your ORTTA NSF grant administrator for assistance.

For information about FastLane, see SPA's web site or an article in the April *Research Review*, <http://www.ortta.umn.edu/spa/> or <http://www.ortta.umn.edu/rr/98-04/contents.htm>.

Sponsored Projects Administration

Question: Can I encumber funds to pay bills that will not arrive until after a grant has ended?

Answer: Yes!

When you purchase goods or services for use during a grant, but the invoice or bill for them won't arrive until after the grant ends, encumber sufficient funds to pay the bill.

On the other hand, if the goods or services themselves will not arrive in time to serve their purpose before the end of the grant, you should not be charging them to the grant in the first place. In the case of equipment, in particular, purchases typically are not allowed in the last two months of a grant.

Also note that encumbering funds for a purchase before a grant ends does not guarantee that the purchase will be allowable.

National Science Foundation

NSF Biological Sciences Wants Electronic Proposals

Beginning June 1, 1998, NSF's Directorate for Biological Sciences (BIO) "very strongly encourages" electronic submission of proposals, or at least their cover pages and project summaries, via NSF's FastLane system.

In a March 25 letter, BIO assistant director Mary E. Clutter explained that digital submission of cover pages is especially useful because it avoids errors when NSF transcribes data, and because it allows fast, easy communication with investigators and university offices.

BIO will also begin use in June of a new on-line coding system for proposals that will help it pick appropriate reviewers and keep better track of proposals.

You can read Clutter's letter at <http://www.nsf.gov/pubs/1998/nsf9885/nsf9885.htm>.

FormsNirvana Does Not Prevent Delays

But it Does Point Out Where They Are

FormsNirvana, the University's system for transmitting documents via the electronic web, has two big advantages for financial transactions on sponsored projects:

- One, you don't have to walk pieces of paper from place to place for signatures.
- Two, you can always tell precisely where a document is in its journey. If the document is delayed, you can tell exactly where it is delayed.

FormsNirvana cannot, however, guarantee instant turnaround.

Please remember that documents have to pass through reviews at the unit level and sometimes college level before they can reach Sponsored Projects Administration (SPA) in ORTTA.

Once they arrive at SPA, grant administrators still need to review your financial transactions—electronic documents will get equal treatment with paper ones. Given the size of SPA's staff and the volume of their work, SPA review can take a few days, especially at the end of the month when traffic is heavy and/or major deadlines loom. So please start your documents on their FormsNirvana way with adequate lead time. Once your documents—electronic or paper—reach SPA, grant administrators will attempt to review and return them within five working days.

Note in particular that a document listing transactions for several different grants often needs attention from several SPA grant administrators, one at a time, each one in turn. And if such a document goes back to the unit for correction, the process gets repeated and may take longer than 5 days.

Responsible Management of Research

open to all UM faculty

Offered by the

Office of the Vice President for Research

Wednesday, June 3

1:00 to 4:30 p.m.

Nolte Center, room 140.

Space is limited.

For information or registration, please write to
RschTrng@tc.umn.edu.

University Inventions

[continued from page 1]

vided 60 percent of the total investment and 80 percent of the employment.

Such data adds up to the University faculty and its inventions inspiring a large body of economic activity outside the University.

“The investment out there in the community dwarfs the revenues taken in by the University,” researchers pointed out when they presented the numbers. “And that’s the intent of technology transfer—to generate the greatest public good at a reasonable return to the University.” They made their report to the University’s Patent and Technology Marketing office (PTM) on April 8.

The researchers, five MBA students in the Carlson School, surveyed current holders of exclusive licenses to University-owned technologies. From January through March 1998, they asked about investments from both inside and outside the licensee companies, and about employee-years devoted to the technologies. They chiefly sought to

eration, they got 65 percent response (59 out of 91 licensees) and apparently some of the best induced investment data in the technology transfer business.

Comparison of the UM, MIT, and Penn results shows Minnesota extrapolating from a larger set of respondents to find considerably more investment per license-year (\$4.16 million, \$0.98 million, and \$0.93 million, respectively) and far less of that investment coming to the

UM vs. MIT vs. Penn			
	<u>U. Minn.</u>	<u>MIT</u>	<u>Penn.</u>
Investment (\$millions)			
/ license-year	\$4.16	\$0.98	\$0.93
\$ investment			
/ \$ revenue	104	24	33

Comparison of UM data with the only comparable data sets available, those from the Massachusetts Institute of Technology, 1995, and the University of Pennsylvania, 1997.

Commercial Investment in U of M Technologies, 1986-1997		
	<u>by 91 U.S. Co.'s</u>	<u>by 48 Minnesota Co.'s</u>
Total investment	\$1,678,000,000	\$435,000,000
Investment / license-year	\$4,160,000	\$1,890,000
Total employment	5,921 employee-years	2,542 employee-years
Revenue to UM	\$16,210,000	\$11,110,000

Results of a survey of those now holding exclusive licenses to UM technology. The data account for “induced investment”—dollars spent and jobs created *before* any finished product is sold.

university in fees and royalties (\$1 in \$104 went to UM; \$1 in \$24 to MIT; and \$1 in \$33 to Penn.).

To account for the differences between UM on the one hand and MIT and Penn on the other, Alban, et al., tried some adjustments—for example, counting the 59 survey respondents only, rather than extrapolating to

measure “induced investment”—meaning money and time spent on development, production, and marketing before a product is sold.

Sales of finished products is the simple and popular measure of technology transfer success. Induced investment data, on the other hand, accounts for all the otherwise hidden work and capital that goes into making a first sale.

The five UM students—Christopher Alban, Paul Edwards, David McMahon, Christopher Meldrum, and Gary Stamper—modeled their survey on the only two precedents: a 1995 study by the Massachusetts Institute of Technology and a 1997 study by the University of Pennsylvania. Because the UM researchers had a large team, and they phoned again and again to encourage licensee’s coop-

the entire 91 companies. “We believe the investment per license-year at UM is closer to \$2.8 million,” said McMahon at one point.

Alban, et al., discussed several potential biases in their work and its comparison to MIT and Penn:

MIT has no medical school, and neither MIT nor Penn have agriculture schools. PTM codirector Jim Severson suggested it would make more sense for UM to compare itself, were the data available, to the Universities of Michigan, Wisconsin, and Washington.

Small companies are more likely respond to such a survey than big ones, and successful companies more than

unsuccessful ones. In addition, the research team's follow-up calls tended to prod big investors more aggressively than little ones. And a few licenses, currently subjects of litigation, were excluded from the survey.

So there may be some very large investments by licensees who did not respond, argued Severson, and some of the technologies hidden by litigation are no doubt valuable.

"There are winners out there, in that nonrespondent group, and I don't think your sample is biased," he said.

"You've got a far better data set than either MIT or Penn," Severson added. "Two-thirds of the population—a statistician would do handsprings over that."

by Phil Norcross

**Success of Finished Products
based on
University of Minnesota Technologies
Nationwide, 1986-1997**

	<u>Physical Sci.</u>	<u>Biotech.</u>	<u>Total</u>
Total sales (\$millions)	\$108	\$193	\$301
Jobs created (fte)	717	510	1227

Sales figures from royalty data, divided by industry averages for employees per dollar of sales, yields number of employees.

For more information:

Christopher Alban, Paul Edwards, David McMahon, Christopher Meldrum, and Gary Stamper wrote "Economic impact from licensing activities: a University of Minnesota perspective" for the University of Minnesota office of Patents and Technology Marketing, April 1998. For more information, phone Jim Severson, at 612/624-0262.

The MIT and Penn studies were both published in *Journal of the Association of University Technology Managers*: Lori Pressman, Sonia Guterman, Irene Abrams, David Geist, & Lita Nelsen, "Pre-production investment and jobs induced by MIT exclusive patent licenses: a preliminary model to measure the economic

impact of university licensing," vol. 7 (1995) pp. 49-82; and Peter B. Kramer, Sandy Scheibe, Donyale Reavis, & Louis Berneman, "Induced investments and jobs produced by exclusive patent licenses—a confirmatory study," vol. 9 (1997) pp. 79-97.

Transfer of technology from universities to private industry chiefly began with the Bayh-Dole Act of 1980 (P.L. 96-517), which asserts the federal government's claim on technologies invented with federal research money, and which granted to universities a partnership in that claim, provided they protect the technology, typically by filing for patents, and encourage private industry to develop it into useful products.

Commercial Investment
in
University of Minnesota Technologies

	<u>Investment Nationwide</u>			<u>Investment in Minnesota</u>		
	<u>Physical Sciences</u>	<u>Biotech.</u>	<u>Both</u>	<u>Physical Sciences</u>	<u>Biotech.</u>	<u>Both</u>
Number of licenses	45	46	91	28	20	48
Average age of licenses (years)	4.76	4.12	4.43	5.16	4.27	4.79
Investment (\$millions)	478	1,200	1,678	263	172	435
Investment / license-year (\$millions)	2.23	6.34	4.16	1.82	2.01	1.89
Jobs created (employee-years)	3,769	2,152	5,921	2,012	530	2,542
License revenue to UM (\$millions)	3.23	12.98	16.21	2.30	8.82	11.11
Revenue / license (\$millions)	0.07	0.28	0.18	0.08	0.44	0.23
\$ investment / \$ revenue	148	92	104	114	19	39
\$ revenue / \$ investment (%)	0.7	1.1	1.0	0.9	5.1	2.6
	<u>Start-ups</u>	<u>Small Co.'s</u>	<u>Large Co.'s</u>	<u>Start-ups</u>	<u>Small Co.'s</u>	<u>Large Co.'s</u>
Number of licenses	17	48	26	14	29	5
Average age of licenses	3.96	4.27	5.06	3.66	5.18	5.71
Investment (\$millions)	70	75	1,533	58	67	310
Investment / license-year (\$millions)	1.04	0.36	11.66	1.13	0.45	10.85
Jobs created (employee-years)	262	665	4,995	221	601	1,720
License revenue to UM (\$millions)	1.61	8.83	5.77	1.48	8.74	0.89
Revenue / license (\$millions)	0.09	0.18	0.22	0.11	0.30	0.18
\$ Investment / \$ revenue	44	8	266	39	8	349
\$ Revenue / \$ investment (%)	2.3	11.8	0.4	2.6	13.0	0.3

notes:

Results are extrapolated from 59 survey responses—a 65 percent response rate.

The data accounts for licenses and investments from Oct. '86 through Dec. '97 (11.3 years total).

Physical Sciences refers to medical devices and mechanical, electrical, electronic, and chemical technologies;

Biotechnology refers to plant, animal, & human medicine, agriculture, & technology;

Software licenses were excluded from the research.

Licenses in this case means current agreements granting exclusive rights to the licensee.

Investment is "induced pre-commercial investment," i.e. private investment, from both inside & outside the licensee organization, for all purposes, prior to any sale of finished products.

Revenue is license fees, reimbursement of patenting expenses, "milestone payments," and royalties.

Start-ups are new ventures based on the UM technologies they license;

Small companies have up to 500 employees; *large* ones more than 500.

New UM Technology Transfer Agreements

January 1998 - March 1998

Title: **Image and Document Management System for Content-Based Retrieval**
Purpose: For indexing and retrieving compressed image files
Inventors: Ahmed H. Tewfik, Mitchell D. Swanson, Srinath Hosur, Electrical & Computer Engineering
Licensee: Cognicity, Inc., Edina, MN
Exclusive license agreement

Title: **Method and Apparatus for Embedding Data, Including Watermarks, in Human-Perceptible Images, Sounds, and Video**
Purpose: A technique for marking electronic files—audio, video, or still images—with hidden data that serves to identify the file
Inventors: Ahmed H. Tewfik, Mitchell D. Swanson, Bin Zhu, Laurence M. Boney, Khaled N. Hamdy, Electrical & Computer Engineering
Licensee: Cognicity, Inc., Edina, MN
Exclusive license agreement

Title: **Agricultural-Residue-Based Absorbent Material and Method for Manufacture**
Purpose: To produce absorbent products from agricultural waste
Inventors: Brian K. Brashaw, Christian F. Edwardson, Roy D. Adams, Robert J. Vatalaro, Natural Resources Research Institute, Duluth
 Larry E. Berg, Outside UM
Licensee: Second Harvest Co-Op, New Richland, MN
Exclusive license agreement

Title: **METIS (Software)**
Purpose: Software for statistical analysis and graph-making
Inventors: George Karypis, Vipin Kumar, Computer Science & Engineering
Licensee: Net Exchange, San Diego, CA
Nonexclusive software license agreement

Title: **Monoclonal Antibodies Reactive with Native and Denatured Cytochrome C from Various Species**
Purpose: For protein separation and identification
Inventors: Ronald R. Jemmerson, Microbiology
Licensee: R & D Systems, Inc., Minneapolis, MN
Nonexclusive license agreement

Title: **"Elder Health/PRA"**
Purpose: To identify elderly people at high risk for serious health problems
Inventors: Charles E. Boulton, Family Practice & Community Health
Licensee: Geriatric Health Systems, San Francisco, CA
Nonexclusive software license agreement

Title: **Microbiological Agent for Thistle Control**
Purpose: To apply bacteria to thistles and inhibit the thistles' growth
Inventors: Donald L. Wyse, David Johnson, Agronomy & Plant Genetics
Licensee: Encore Technologies, Inc., Minnetonka, MN
Exclusive license agreement

Title: **Maxi-Mums: Shrub Garden Chrysanthemums**
Purpose: Large, shrub-like, winter-hardy mums
Inventors: Neil O. Anderson, Peter D. Ascher, Horticultural Science
Licensee: Marge Kesler Gardens, Byron, MN
Licensee: Lake Country Gardens, Battle Lake, MN
Licensee: Neely, Tom, Blakeslee, PA
Licensee: Wind Dancer Nursery, Jacobson, MN
Nonexclusive plant patent & trademark agreements

Title: **Strawberry Plant Called MNUS 210 ("Winona")**
Purpose: A strawberry for Midwest U.S. climates that bears a large fruit in late season and resists disease
Inventors: David K. Wildung, North-Central Experiment Station, Grand Rapids
 Gene J. Galletta, Outside UM
 James J. Luby, Horticultural Science
Licensee: Daisy Farms, Decatur, MI
Licensee: Lassen Canyon Nursery, Inc., Redding, CA
Nonexclusive plant patent & trademark agreements

Title: **Strawberry Plant Called MNUS 248 ("Mesabi")**
Purpose: A cold-climate, high-yield strawberry that bears in midseason and resists disease
Inventors: David K. Wildung, North-Central Experiment Station, Grand Rapids
 Gene J. Galletta, Outside UM
Licensee: Nourse Farms, Inc., South Deerfield, MA
Licensee: Daisy Farms, Decatur, MI
Licensee: Lassen Canyon Nursery, Inc., Redding, CA
Licensee: Krohne Plant Farms, Inc., Hartford, MI
Licensee: Brittingham Plant Farms, Salisbury, MD
Licensee: Indiana Berry & Plant Co., Huntingburg, IN
Nonexclusive plant patent & trademark agreements

Patents Issued to UM January 1998 - March 1998

(includes patents issued prior to 1st quarter but not previously reported)

Title: **Miscible Polyolefin Blends**
Purpose: A process for blending together different plastic materials, especially polypropylene and polyethylene.
Inventors: Frank S. Bates, Jeffrey H. Rosedale, Kristoffer Almdal, Mark F. Schulz, Chemical Engineering & Materials Science

Title: **Biocompatible Materials**
Purpose: To provide a biomaterial with improved nonthrombogenic surface
Inventors: Anja S. Metzger, Daniel L. Mooradian, Leo T. Furcht, Laboratory Medicine & Pathology

Title: **In Vitro Method for Screening Beta-Amyloid Deposition**
Purpose: For detecting and monitoring Alzheimer's disease
Inventors: Patrick W. Mantyh, Preventive Sciences
John E. Maggio, Outside UM

Title: **Lowering Blood Cholesterol Levels Using Water-Soluble Cellulose Ethers**
Purpose: For treating high cholesterol in humans
Inventors: Daniel D. Gallaher, Craig A. Hassel, Kyung-Jae Lee, Food Science & Nutrition

Title: **Radiopharmaceutical Agents for the Detection of Alzheimer's Disease**
Purpose: For diagnosing Alzheimer's disease
Inventors: Stanley M. Parsons, Outside UM
Simon M. N. Efange, Radiology

Title: **Mild Solid-Phase Synthesis of Aligned, Branched Triple-Helical Peptides**
Purpose: For studying interactions among cells, proteins, and collagens
Inventor: Gregg B. Fields, Laboratory Medicine & Pathology

Title: **Strawberry Plant Called "MNUS 210"**
Purpose: A strawberry for Midwest U.S. climates that bears a large fruit in late season and resists disease
Inventors: James J. Luby, Horticultural Science
David K. Wildung, North-Central Experiment Station, Grand Rapids
Gene J. Galletta, Outside UM

Title: **Laminin A Chain Polypeptides from the Amino Terminal Globular Domain**
Purpose: Materials that help cells to adhere and spread around medical devices
Inventors: Amy P. N. Skubitz, Leo T. Furcht, Laboratory Medicine & Pathology

Title: **High-Efficiency Microbubble Aeration**
Purpose: For efficient transfer of a gas into a liquid
Inventors: Michael J. Semmens, Civil Engineering
Charles J. Gantzer, Michael J. Bonnette, Outside UM

Research Animal Resources Rodent Wet Lab

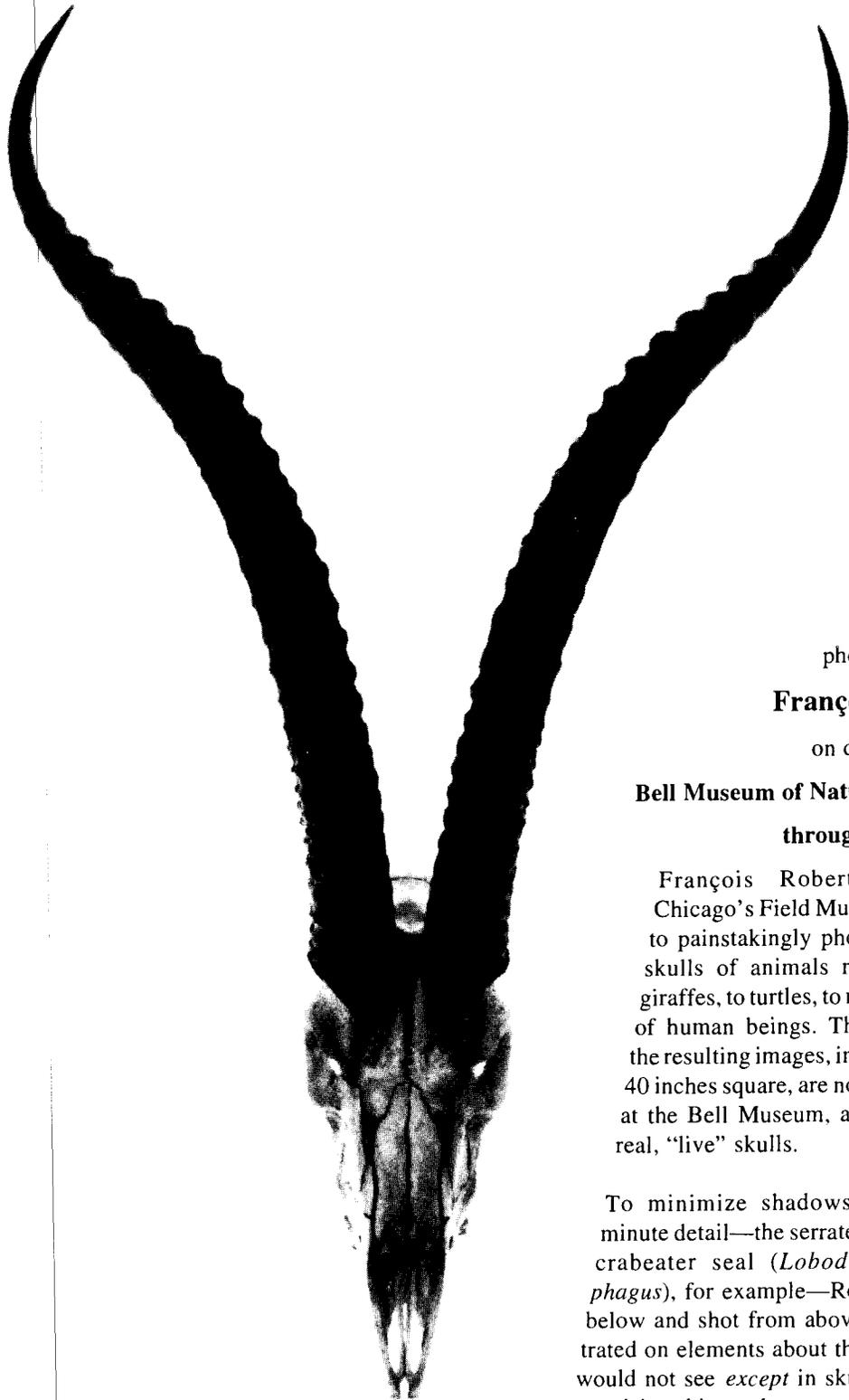
June 3rd, 1:00 to 3:00 pm

Moos Tower room 19-250

Preregistration is required.

Please contact Brenda Koniar at 625-0923 or
konia001@tc.umn.edu.

Please indicate your interest in specific
species and procedures.



Robert's image of a Grant's gazelle (*Gazella granti*). Reprinted with permission.

Skulls

photographs by

François Robert

on display at the

Bell Museum of Natural History

through August 16

François Robert went to Chicago's Field Museum in 1986 to painstakingly photograph 170 skulls of animals ranging from giraffes, to turtles, to monkeys; and of human beings. Thirty-three of the resulting images, in prints nearly 40 inches square, are now on display at the Bell Museum, along with 50 real, "live" skulls.

To minimize shadows and reveal minute detail—the serrated teeth of the crabeater seal (*Lobodon carcinophagus*), for example—Robert lit from below and shot from above. "I concentrated on elements about the animal you would not see *except* in skull form—the surprising things, the unusual things," he says.

Robert is a commercial photographer in Chicago.

National Institutes of Health

NIH Requires Including Children Among Research Subjects

As of October 1, 1998, the NIH requires that research involving human subjects will include children as well as adults—"a sufficient number of children to contribute to a meaningful analysis relative to the purpose of the study"—unless there are scientific or ethical reasons to exclude children. By "children" NIH means people under age 21.

Plans for NIH-funded research are to include a section titled "Participation of Children." It should describe plans to include children, or it should justify the exclusion of children. When children are included, it should also describe the investigators' expertise in dealing with children and the research facilities' appropriateness for children.

The NIH lists seven reasons for excluding children from a study:

- The research topic is irrelevant to children;
- There are laws barring their inclusion;
- The knowledge being sought is already available for children;
- A separate age-specific study in children is warranted;
- Insufficient data are available to judge the risk to participating children;
- The study involves follow-up on a previous study of adults; or
- Other special cases are found acceptable by review groups and the institute director.

NIH developed this policy, at the direction of Congress, because scientifically evaluated treatments are less available to children and treatments applied to children are often based upon testing with adults only. "The participation of children in research, including children of both genders and children from minority groups, is important to assure that they receive a share of the benefits of research," says the policy.

The new policy applies to all applications and proposals submitted for receipt dates after October 1, 1998. It applies to all NIH-funded research involving human subjects, including "minimal risk" research that is exempt from the federal policy "Protection of Human Subjects" (45 CFR 46).

Under the new policy, Institutional Review Boards (IRBs) are expected to examine the appropriateness of children's participation, and they may only approve research that

meets the already existing provisions that protect child research-subjects: "Additional Protections for Children Involved as Subjects in Research" (45 CFR 46, subpart D, sections 401-409).

Peer reviews of a proposal's scientific and technical merit will also evaluate the inclusion or exclusion of children. Review groups must include appropriate expertise in research involving children.

For more information, see the "NIH Policy and Guidelines on the Inclusion of Children as Participants in Research Involving Human Subjects," NIH Guide, March 6, 1998, <http://www.nih.gov/grants/guide/1998/98.03.06/>.

National Institutes of Health

Unsolicited Applications of \$500,000 or More

Starting with the June 1, 1998 receipt date, researchers must obtain clearance from an NIH official before submitting *any* unsolicited application requesting annual direct costs of \$500,000 or more. Previously, the policy applied only to *new* unsolicited applications, but is now being extended to include new (type 1) applications, competing continuation (type 2) applications, and any amended/revised version of type 1 or type 2 grant applications. The new policy also applies to group applications (e.g., clinical trial networks, epidemiologic studies) that request a total of \$500,000 or more direct costs for any one year, even if none of the individual applications request that much.

An applicant must contact institute or center program staff before submitting the application and must obtain an agreement that the institute or center will accept the application for consideration. The application must further identify, in the cover letter that is sent with the application, the staff member and institute or center who agreed to accept assignment of the application. Any application subject to this policy that does not contain the required information in a cover letter will be returned.

The policy does not apply to an application submitted in response to an RFA or in response to other announcements with specific budgetary limits.

To see a full copy of the announcement go to <http://www.nih.gov/grants/guide/notice-files/not98-030.html>.

Recent Publications by University Authors

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More Information

To receive copies of NIH and NSF application kits, please call 612/624-0061, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ Pediatric AIDS Foundation Elizabeth Glaser Scientist Award

The Elizabeth Glaser Scientist Award is an international program which supports basic medical research using clinical material. It *does not* fund large therapeutic trials or the pharmacologic development of drugs. It is especially interested in receiving applications for the following research topics:

- Transmission of virus from mother to infant
- Pathogenesis of HIV infection
- Mucosal immunity to HIV (including studies of the pediatric GI tract)
- Characterization of immune response to HIV
- Central nervous system and HIV
- Role of the placenta in facilitation of, or protection from, HIV infection
- Host genetic factors that increase or decrease susceptibility of the neonate to perinatal HIV infection
- Vaccine development
- Breast-milk transmission
- Other critical areas highly relevant to pediatric HIV/AIDS research

The award provides \$650,000 in direct costs for five years of research. Indirect is at 5 percent of direct costs. Each applicant must have an M.D., Ph.D., D.D.S., or D.V.M. degree and be at the assistant professor level or above. Full professors will be considered only under very special circumstances. Endowed chairs are not eligible to apply.

A letter of intent on the appropriate form must be submitted by **June 10, 1998**. Full proposals will be invited. For further information contact the agency in care of Trish Devine, Programs Director, Elizabeth Glaser Pediatric AIDS Foundation, 2950 31st Street, Suite 125, Santa Monica, CA 90405, 310/395-9051, fax 310/395-5149, research@pedaids.org. You may access the foundation's web site at <http://www.pedaids.org>.

■ National Science Foundation Academic Liaison with Industry

The National Science Foundation is sponsoring the Grant Opportunities for Academic Liaison with Industry Initiative (GOALI). The initiative funds university-industry partnerships.

Several groups are targeted to benefit from this program: 1) faculty, postdoctoral fellows, and students interested in research on production processes in an industrial setting; 2) industrial scientists and engineers who can bring industry's perspective and integrative skills to academe; and 3) interdisciplinary university-industry teams conducting long-term projects.

Deadlines **vary by directorate**. For more information go to <http://www.nsf.gov/home/crssprgm/goali/start.htm>.

■ Hewlett Foundation

The William and Flora Hewlett Foundation is soliciting grant applications for its Conflict Resolution Program. Areas include **Promotion of the Field**, which supports organizations that educate potential users about conflict resolution techniques; and **Consensus Building, Public Participation and Policymaking**, which funds organizations to demonstrate methods for improving decision making processes on issues of major public importance.

Applications must be submitted by **July 1, 1998**. For more information, call 650/329-1070 or go to <http://www.hewlett.org/gconflict.htm>.

■ Harry Frank Guggenheim Foundation

The Harry Frank Guggenheim Foundation provides research grants that promote the understanding of the causes, manifestations, and control of violence, aggression, and dominance. The foundation is particularly interested in research that connects these themes to social change, socialization of children, intergroup conflict, drug trafficking and use, and family relationships.

Awards are normally in the range of \$15,000 to \$35,000 per year for one or two years.

New applications must be received by **August 1, 1998**. For more information call 212/644-4907 or go to <http://www.hfg.org/>.

■ Office of Naval Research Multidisciplinary Research Program of the URI

The Office of Naval Research is inviting proposals under the Multidisciplinary Research Program of the University Research Initiative (MURI). The program supports university teams whose research efforts intersect more than one traditional science and engineering discipline. Thirteen areas of interest under four broad topics have been selected for this competition. They are: 1) hybrid molecular and spin-semiconductor based research; 2) tunable optical polymeric system (TOPS); 3) semiconductor interface electronics; 4) semiconductor radiation physics; 5) computational prediction and design of material properties; 6) information physics, nonclassical information representation and manipulation; 7) science base for nanolithography; 8) high selectivity in biological detection; 9) biomimetic materials with adaptive infrared response; 10) stochastic chemical sensing mechanisms; 11) pulsed detonation phenomena for propulsion; 12) innovative vacuum electronics; and 13) models for specification and forecast of the global ionosphere.

Awards are for a basic period of three years with two additional years possible. Awards may range from \$250,000 to \$1.15 million per year.

A six-page white paper is requested by **June 11, 1998**. Although not required, such papers are strongly encouraged. Full proposals are due **October 27, 1998**. For a full copy of the announcement, go to http://www.onr.navy.mil/sci_tech/special/muri99/.

■ Office of Naval Research Young Investigator Program

The Office of Naval Research (ONR) is inviting applications to encourage young investigators to pursue studies in naval research interests. Applicants must be U.S. citizens, nationals, or permanent residents with tenure track or permanent positions in U.S. higher education institutions, and must have received a Ph.D. on or after December 1, 1993.

ONR will make at least 18 awards of \$100,000 a year for three years. Grantees may obtain additional support to purchase equipment.

The application deadline is **October 1, 1998**. For further information contact Donald Polk, ONR 353, Office of Naval Research, 800 North Quincy Street, Arlington, VA 22217-5660; 703/696-4111. Refer to BAA 98-013. Information is also available at <http://www.onr.navy.mil> under *Education/URI Programs*.

■ U.S. Air Force Innovative Computational Mathematics for Physical Applications

The Air Force Office of Scientific Research (AFOSR) is inviting applications for projects to demonstrate significant mathematical innovation and high payoff potential to the Department of Defense (DoD) in specific areas. Areas include physics-based modeling and signal processing applied to the end-to-end design and optimization of DoD sensor systems; modeling, data analysis, or scaleable high-order numerical methods for electromagnetic, sensing, chemical, and biological applications; and optimized portable application libraries.

Awards generally range from \$100,000 to \$600,000 per year. Eligible applicants include universities, nonprofit and for-profit research organizations, and individuals.

The application deadline is **September 30, 1998**. For further information contact Arje Nachman, AFOSR/PK, 110 Duncan Avenue, Room B115, Bolling Air Force Base, Washington, DC 20332-8050; 202/676-4939, arje.nachman@afosr.af.mil.

■ Department of Energy Inventions and Innovation Program Grants

The Department of Energy, Office of Industrial Technologies, is funding a competitive grant program entitled the Inventions and Innovation (I&I) program. The goals of the program are to improve energy efficiency through the promotion of innovative ideas and inventions that have a significant potential energy impact and a potential future commercial market. The dominant energy users and waste generators in the manufacturing sector are of particular interest to the I&I program and include aluminum, chemicals, forest products, glass, metal-casting, and steel.

Small businesses, individual inventors, and entrepreneurs are especially encouraged to participate. Up to \$3 million is available to cover grants at two levels. The first level will fund up to \$40,000 for projects which fall within the first two stages of development; the second level will fund up to \$100,000 for projects which fall within the last three stages of development. Cost sharing is not required but is encouraged.

To obtain a copy of the solicitation, eligible applicants may write to the U.S. Department of Energy Golden Field Office, Attn: Jennifer Squire, 1617 Cole Boulevard, Golden, CO 80401, fax 303/275-4788. Electronic copies are available from <http://www.eren.doe.gov/golden/solicit.htm>.

■ Food and Drug Administration Microbiological Hazards Associated with the Food Animal Production Environment

The Food and Drug Administration (FDA), Center for Veterinary Medicine, announces the availability of research funds for FY98 to study the microbiological hazards associated with the food animal production environment, including animal feeds. The research will include 1) development and/or evaluation of methods for the detection of human food-borne pathogens in the animal environment and feeds; 2) investigations of factors associated with the emergence, transmission, and carriage of human food-borne pathogens in or on food-producing animals and edible products derived from them; and 3) investigations of the microbiological consequences of the use of antibiotics in the animal production environment, including selection and elaboration of antibiotic resistant pathogens and possible interactions which would create conditions for increased pathogen carriage rates.

It is of particular interest to the FDA that this research advance scientific knowledge of human food-borne pathogens such as salmonellae, *Escherichia coli*, and campylobacteria. Potential areas of investigation include transmission and fate in animal agriculture, antibiotic resistance development and dissemination in the animal production environment, and cultural/molecular methods for use in studying the microbiota of the animal production ecosystem.

Approximately \$1 million is available to fund 6 to 12 awards of \$100,000 to \$200,000 per award per year (direct and indirect costs) for up to 3 years. Applicants are strongly encouraged to contact FDA to resolve any questions regarding criteria or administrative procedure prior to the submission of their applications.

The application deadline is **June 1, 1998**. Applications forms are available from Robert L. Robins, Grants Management Officer, Division of Contracts and Procurement Management (HFA-520), Food and Drug Administration, 5600 Fishers Lane, Park Building Room 3-40, Rockville, MD 20857; 301/443-6170.

■ U.S. Army Breast Cancer Research

The U.S. Army Medical Research and Development Command (USAMRDC) is inviting applications for research and training to prevent and cure breast cancer and improve the quality of life for women living with breast cancer.

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\$111 million is available for new awards in several categories. \$80 million is for research, including Idea and Clinical Translational Research awards; \$26 million is for training and recruitment grants, including predoctoral traineeships, postdoctoral traineeships, institutional training grants, and career development awards; and a new category, \$5 million for academic awards, to fund established and productive scientists of proven ability.

Clinical Translational Research grants required a preproposal by **May 13, 1998**, with final proposals due **August 26, 1998**. All other grants have an application deadline of **July 1, 1998**.

For further information contact Craig Lebo, DAMD17, USAMRAA, 820 Chandler Street, Fort Detrick MD 21702-5014; 301/619-7090, fax 301/619-7792. Information is also available on the USAMRDC website, <http://mrmc-rad6.army.mil/documents.html>.

NOTE: Other 1998 competitions are coming soon. \$7 million will be available for research and training in neurofibromatosis; \$10 million for research on ovarian cancer; and \$5 million for minority training prostate cancer research. The USAMRDC will issue its 1999 prostate cancer research and training program announcement in midsummer. Information will be on the website listed above.

■ National Institutes of Health Midcareer Investigator Award in Patient- Oriented Research PA-98-053

The National Institutes of Health is inviting applications for the Midcareer Investigator Award in Patient-Oriented Research (K24). The purpose of the award is to provide support for clinicians to allow them protected time to devote to patient-oriented research and to act as mentors for beginning clinical investigators. NIH is especially interested in increasing the number of scientists trained to conduct high-quality clinical research.

For the purposes of this award, patient-oriented research is defined as research conducted with human subjects (or on material of human origin such as tissues, specimens, and cognitive phenomena) for which an investigator directly interacts with human subjects. The area of research includes 1) mechanisms of human disease; 2) therapeutic interventions; 3) clinical trials; and 4) the development of new technologies.

Candidates must be working in a research environment, conducting patient-oriented research, and *have indepen-*

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dent research support. Candidates must be willing to spend at least 25 percent and up to 50 percent of their effort conducting patient-oriented research and mentoring. Candidates must have a clinical degree or its equivalent and must be within 15 years of their specialty training. Individuals holding the Ph.D. degree may apply if they have been certified to perform clinical duties, such as a clinical psychologist, clinical geneticist, etc.

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

A full copy of the announcement may be found at <http://www.nih.gov/grants/guide/pa-files/PA-98-053.html>.

■ Monsanto

***Arabidopsis* EST Microarray-DNA Chip Plant Biology Research**

Using cDNA microarrays enables a researcher to analyze expression of thousands of genes with known sequence in a single experiment. This chip-based approach using microarrays of cDNA clones as gene-specific hybridization targets allows quantitative measurements of the differential expression of the corresponding plant genes using a two-color fluorescence labeling and detection scheme. (Schena, et al., 1996, *PNAS* 93:10614).

Monsanto Life Sciences Company, in collaboration with Synteni, Inc., is establishing this plant biology microarray project to enhance plant genomics research in academia. The program will provide researchers the opportunity to access approximately 10,000 *Arabidopsis* expressed sequence tags on a microarray. Studies in plant genetics, plant physiology, plant development, evolutionary biology, and plant metabolic regulation are particularly likely to benefit from this technology.

Academic participation requires a willingness to allow Monsanto and Synteni to access genes and information discovered as a result of this program.

The *Arabidopsis* academic program will be on-going for at least 2 years with proposals being accepted in the spring and fall. Approximately 40 to 50 awards will be made during each proposal and review cycle. For the next review cycle, proposals are due **August 15, 1998**. For complete information on this program, contact the *Arabidopsis* Academic Program, Monsanto Company, Mail Stop O3A, 800 North Lindbergh Boulevard, St. Louis, Missouri 63167; fax 314/694-2303, or go to <http://www.monsanto.com/arabidopsis>.

■ Social Security Administration

As currently legislated, the Old-Age and Survivors Insurance (OASI) and Disability Insurance trust funds are projected to have a 25% shortfall by the year 2029. The manner by which the nation will react to or avoid this shortfall is arguably the most important policy decision of this decade. The Social Security Administration announces the solicitation of applications for a cooperative agreement to create a Retirement Research Consortium (RRC) in order to inform the public and policymakers about policy alternatives and their consequences. The RRC will serve as a national resource fostering high-quality research, communication, and education. This will be accomplished through four tasks:

1. Research and evaluation. The RRC will be expected to plan, initiate, and maintain a research program of high caliber. There will be special emphasis on retirement income policy and the protection of low-income workers and their families from economic loss due to retirement, death, or disability, as well as issues related to long-range solvency. The RRC will also describe and evaluate retirement policies with an emphasis on OASI-related programs.
2. Dissemination. The RRC will develop resources to inform the academic community, policymakers, and the public on issues concerning retirement policy and economic security during retirement.
3. Training and education. The RRC will develop a professional training program including, but not limited to, graduate and postgraduate education; intramural exchanges; and formal instruction of policymakers which focuses on the issues of retirement policy.
4. Facilitation of data usage. The RRC will facilitate research using SSA administrative data.

Applications are requested from domestic universities or other post-secondary degree granting entities. \$1.25 million is available for each of two centers for the initial 12-month period of a five-year cooperative agreement.

An optional, nonbinding letter of intent is requested by **June 1, 1998**, that includes 1) the program number and title (SSA-ORES-98-1); 2) a brief description of the proposed center; 3) the name, postal and e-mail address, telephone and fax numbers of the center director; and 4) the identities of the key personnel and participating institutions. Letters should be sent to RRC Letter of Intent, Division of Policy Evaluation, Office of Research, Evaluation and Statistics, SSA, 500 E Street SW, 9th Floor, Washington, DC 20254-0001.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1998	314	\$ 64,553,947
Awards Processed		
March 1998	346	66,242,408
Proposals Submitted		
July 1997 - March 1998	3,020	611,614,572
Awards Processed		
July 1997 - March 1998	2,309	291,207,364
Proposals Submitted		
July 1996 - March 1997	2,904	441,088,068
Awards Processed		
July 1996 - March 1997	2,198	255,581,691

Dynamic Light Scattering, Calorimeter and Fluorometer for Structure/Function Studies of Macromolecules

Leonard J. Banaszak, Biochemistry, Medical School
 David D. Thomas, Biochemistry, Medical School
 National Science Foundation
 \$148,545 - 3/1/98-2/28/99

Perturbations in Vitamin B6 Metabolism in Cancer

Louise M. Nutter, Pharmacology
 NIH, NCI
 \$168,080 - 3/1/98-2/28/99

Structural Studies of Glucose Regulatory Enzymes

David G. Levitt, Physiology
 NIH, NIDDK
 \$134,901 - 3/1/98-2/28/99

Graduate Training in Family Medicine

William E. Jacott, Family Practice and Community Health
 HRSA, BHP
 \$148,817 - 9/30/97-6/30/98

Early Detection Outcomes - Lung Transplant Rejection/Infection

Stanley M. Finkelstein, Laboratory Medicine and Pathology
 Marshall I. Hertz, Medicine
 Mariah Snyder, Nursing
 NIH, NCNR
 \$363,478 - 3/1/98-2/28/99

Molecular Genetics of the SCA1 Locus

Harry T. Orr, Laboratory Medicine and Pathology
 NIH, NINDS
 \$261,009 - 3/1/98-2/28/99

Developmental Changes in the Ductus Arteriosus

Helen L. Reeve, Medicine
 NIH,
 \$73,670 - 2/1/98-1/31/99

Heart Wave Form Analysis Device

David G. Benditt, Medicine
 Harbinger Medical, Inc.
 \$10,000 - 11/13/97-11/12/98

Minneapolis/Network 13 Center for Chronic Disease Outcomes Research

Hanna B. Rubins, Medicine & VA
 Veterans Affairs
 \$3,400,000 - 04/01/98-04/01/03

Regulation of Coronary Blood Flow in Congestive Heart Failure

Jay Traverse, Medicine
 American Heart Association, Inc.
 \$260,000 - 1/1/98-12/31/01

Over-Expression of NA, K-ATPASE and Resolution of Lung Injury

Joseph Lasnier, Medicine
 David H. Ingbar, Medicine
 R. Scott McIvor, Human Genetics
 NIH, NHLBI
 \$84,780 - 1/15/98-12/31/98

A Program Evaluation of the Phillips Lead Project

Catherine Jordan, Neurology
 Allina Foundation
 \$65,838 - 1/1/98-2/1/00

Minimizing Inflammation and Maximizing Muscle Loss with Doxorubicin Chemomyectomy for Treatment of Blepharospasm

Linda McLoon, Ophthalmology
 Jonathan D. Wirtschafter, Ophthalmology
 Benign Essential Blepharospasm Research Fdn, Inc.
 \$14,443 - 12/1/97-11/30/98

Feasibility Studies for a Fully-Implantable Hearing Aid

Eric Javel, Otolaryngology
 Samuel Levine, Otolaryngology
 St. Croix Medical, Inc.
 \$1,200 - 9/1/97-1/31/98

Maturation of the AngePass Active Fixation Difibrillation Lead System in the Chronic Canine Model

Richard W. Bianco, Surgery
 Angeion
 \$406,110 - 6/15/97-6/14/99

A National Pilot Test of Provider Reports on Quality in Health Plans

Nicole Lurie, Health Services Research
 Robert Wood Johnson Foundation
 \$2,512,953 - 12/1/98-12/31/01

Genetics in Primary Health Care: Addressing Professional and Ethical Challenges

Diane Bartels, Bioethics
 Bonnie Le Roy, Human Genetics
 Patricia McCarthy Veach, Educational Psychology
 Josiah T. Macy, Jr., Foundation
 \$368,106 - 03/01/98-03/01/01

Conventional vs Percutaneous Discectomy: A Clinical Trial

James R. Boen, Public Health
 John A. Nyman, Health Services Research
 South Carolina University (NIH Prime)
 \$85,802 - 9/1/97-8/31/98

Lung Health Study: Long-Term Follow-Up Data Coordinating Center

John E. Connett, Biostatistics
 Aparna B. Anderson, Biostatistics
 NIH, NHLBI
 \$656,540 - 2/1/98-1/31/99

Small Business Owners' Health and Safety Behavior

Lisa M. Brosseau, Environmental and Occupational Health
 Ian A. Greaves, Environmental and Occupational Health
 CDC, NIOSH
 \$53,634 - 3/1/98-2/28/99

Monitoring the Transformation of Rural Health Care Delivery

Ira S. Moscovice, Health Services Research
Jon Christianson, Health Services Research
Robert Wood Johnson Foundation
\$1,700,398 - 2/1/98-1/31/02

Multi-State Evaluation of Dual Eligibles Demonstrations

Robert L. Kane, Health Services Research
Health Care Financing Administration
\$1,000,000 - 9/30/97-9/29/98

Evaluation of the Evercare Demonstration Program

Robert L. Kane, Health Services Research
Health Care Financing Administration
\$400,000 - 9/26/97-9/30/98

Design of an Integrated Post Acute Care System

Robert L. Kane, Health Services Research
Health Care Financing Administration
\$300,000 - 9/30/97-9/29/98

Alcohol Abuse Treatment Outcomes in Managed Care

Robert L. Kane, Health Services Research
Department of Health and Human Services
\$243,000 - 9/30/97-8/31/98

Rural Telemedicine Grant Program

Theodore R. Thompson, Pediatrics
Department of Health and Human Services
\$372,052 - 1/1/97-9/30/98

Culturally Appropriate Services to Native American Women with HIV

Amos S. Deinard, Community University Health Care Center
Ann J. Brown, Hospital and Clinic
Denise Blackdeer, Hospital and Clinic
Hennepin County
\$22,440 - 10/1/97-2/28/98

Health Information Access for Rural Nurse Practitioners

Christine Mueller, Nursing
NIH, NLM
\$153,597 - 3/1/98-2/28/99

Development of a Recombinant IBDV Vaccine

Jagdev M. Sharma, Veterinary Pathobiology
Sota Tec Fund
\$156,593 - 3/1/97-2/28/99

Dynamic Calcium Regulation in Airway Smooth Muscle

Mathur S. Kannan, Veterinary Pathobiology
NIH, NHLBI
\$879,239 - 04/01/98-03/31/02

Participation in the Space Infrared Telescope Facility (SIRTF) Science Working Group

Robert D. Gehrz, Astronomy
Jet Propulsion Laboratory
\$90,000 - 2/1/98-12/31/98

The Monticello Radiation-Standards Controversy

Robert W. Seidel, Babbage Institute
Ioanna Semendeferi, History of Science and Technology
National Science Foundation
\$8,116 - 2/1/98-1/31/99

Reproducibility in Zirconia Colloid Production

Alon V. McCormick, Chemical Engineering and Materials Science
Minnesota Technology, Inc.
\$82,990 - 3/1/98-2/28/99

Modeling the Growth of Crystals from Solution via High-Performance Computing

Jeffrey J. Derby, Chemical Engineering and Materials Science
National Science Foundation
\$77,865 - 12/15/97-11/30/98

A Unified Approach to Quality-of-Service Provisioning in Integrated Services Network: Traffic Characterization Resource Management and Their Integration

Zhi-Li Zhang, Computer Science and Engineering
National Science Foundation
\$200,000 - 3/1/98-2/28/02

Parallel Algorithms for Robot Planning in Manufacturing

Maria L. Gini, Computer Science and Engineering
Daniel L. Boley, Computer Science and Engineering
National Science Foundation
\$17,700 - 2/15/98-1/31/00

Testing of Passive Transmission Lines

Anand Gopinath, Electrical and Computer Engineering
Cray Research, Inc.
\$42,903 - 6/15/97-12/31/97

Specialized Ultrasound Beams for Medical Imaging

Ahmed H. Tewfik, Electrical and Computer Engineering
NIH, NCI
\$36,679 - 9/15/97-9/14/98

In-Pit Disposal of Taconite Tailings and the Effect on Groundwater Quality

Michael E. Berndt, Geology and Geophysics
St. of Minn., Department of Natural Resources
\$62,620 - 11/10/97-6/30/99

Institute for Mathematics and Its Applications

Willard J. Miller, Mathematics
Frederic J. Dulles, Chemistry
National Science Foundation
\$412,650 - 9/1/97-8/31/98

Shape of Space: Topology in the Middle School

Richard P. McGehee, Mathematics
National Science Foundation
\$64,931 - 3/1/98-10/31/99

Improving Visibility: Heads Up Displays Based on Location

Max Donath, Mechanical Engineering
St. of Minn., Department of Transportation
\$225,000 - 1/2/98-3/31/99

Safetruck: Preventing Run-Off-the-Road Accidents

Max Donath, Mechanical Engineering
St. of Minn., Department of Transportation
\$200,000 - 12/12/97-3/31/99

Development of a Bench-Top Dental Model Digitizer

Arthur G. Erdman, Mechanical Engineering
Perry Li, Mechanical Engineering
Iris Corp.
\$88,127 - 1/1/98-12/31/98

Automotive Exhaust Emissions During Cold-Starting

David B. Kittelson, Mechanical Engineering
Robert W. Waytulonis, Mechanical Engineering
St. of Minn., Department of Transportation
\$29,472 - 1/2/98-3/31/99

Cooperating, Altruism, and Self-Control

David W. Stephens, Ecology, Evolution and Behavior
National Science Foundation
\$70,200 - 11/1/97-6/30/98

Fellowship Program in Plant Biotechnology

Susan M. Wick, Plant Biology
J. Stephen Gantt, Plant Biology
U.S. Department of Agriculture
\$108,000 - 2/1/98-1/31/03

General Grant

Guillermo Rojas, Chicano Studies
Minnesota Humanities Commission
\$2,622 - 10/16/97-6/30/98

Transportation and Twin Cities Regional Growth

John S. Adams, Geography

St. of Minn., Department of Transportation
\$89,710 - 9/15/97-12/31/98**German-American Experience in Minnesota**

Evelyn S. Firchow, German

Minnesota Humanities Commission
\$2,000 - 6/6/97-6/30/98**Proposal for Chicago State University - University of Minnesota Honors**

Allen F. Isaacman, History

John D. and Catherine T. MacArthur Foundation
\$988,941 - 1/1/98-12/31/01**Natural Therapeutics, Medicinal Plants, and Nutraceuticals**

Ervin Oelke, Agronomy and Plant Genetics

Agricultural Utilization Research Institute
\$10,000 - 2/26/98-9/30/98**Evaluation of Different Methods for the Production of Transgenic Chicken**

Abel Ponce De Leon, Animal Science

Cima Biotechnology
\$247,596 - 1/1/98-12/31/99**Eosinophils in Human Disease**

Scott M. O'Grady, Animal Science

Mayo Foundation
\$43,775 - 9/30/97-8/31/98**The Neurobiology of Octopamine Immunoreactive Neurons**

Karen A. Mese, Entomology

National Science Foundation
\$160,654 - 6/1/98-9/30/99**Improving Aphid Monitoring in Small Grains**

Ian MacRae, Entomology

Carlyle Holen, Entomology

Minnesota Wheat Research and Promotion Council
\$16,680 - 1/1/98-12/31/98**General Wheat Support - Morris**

George Nelson, Soil, Water, and Climate

Minnesota Wheat Research and Promotion Council
\$13,500 - 1/1/97-12/31/00**Identification of Transportation-Related Barriers Limiting Expansion of Minnesota's Share of International Visitation**

William C. Gartner, Applied Economics

Daniel L. Erkkila, Forest Resources

St. of Minn., Department of Transportation
\$119,995 - 3/16/98-6/30/00**Enhancing Rural Development Through Electronic Commerce**

William M. Bomash, Extension Service

Donald Riley, Office of Information Technology

U.S. Department of Agriculture
\$250,000 - 2/15/98-8/31/99**Integrating World Wide Web Technology Into Our Teaching and Learning**

Trudy Dunham, Extension Service

U.S. Department of Agriculture
\$227,827 - 2/15/98-2/28/99**Goose Management at the Minneapolis-St. Paul Airport**

James A. Cooper, Fisheries and Wildlife

Metropolitan Airports Commission
\$134,554 - 8/1/97-7/31/02**Evaluating Riparian Area Dynamics, Management Alternatives**

Charles R. Blinn, Forest Resources

St. of Minn., Department of Natural Resources
\$100,000 - 12/1/96-12/1/98**Equilibrium Moisture Content in Minnesota Timber**

Timothy D. Larson, Wood and Paper Science

Douglas Lange, Wood and Paper Science

St. of Minn., Local Road Research Board (MNDOT)
\$15,000 - 11/15/97-2/28/99**Re-evaluation of Wood Energy Production Policies**

Dietmar W. Rose, Forest Resources

Consortium for Plant Biotechnology Research
\$93,632 - 1/1/98-12/31/98**Early Experience and Brain Development**

Charles A. Nelson, Child Development

John D. and Catherine T. MacArthur Foundation
\$2,100,000 - 2/15/98-12/31/00**Adaptation from Childhood to Adulthood: A Longitudinal Study**

Ann S. Masten, Child Development

Auke Tellegen, Psychology

William T. Grant Foundation
\$180,974 - 1/1/98-8/31/00**Local Systemic Change in K-8 Science Education**

Frances Lawrenz, Curriculum and Instruction

Minneapolis Public Schools
\$39,149 - 9/1/97-3/14/99**National Transition Alliance for Youth with Disabilities**

David R. Johnson, Educational Psychology

University of Illinois, Champaign-Urbana
\$485,000 - 10/1/97-9/30/98**Vocational Program Improvement Project**

David J. Pucel, Work, Community, and Family Education

St. of Minn., Department of Children, Families, and Learning
\$93,660 - 9/15/97-8/15/98**The Indian Sari: Draping Bodies, Revealing Lives**

Lindsay Shen, Design, Housing, and Apparel

Minnesota Humanities Commission
\$2,000 - 9/24/97-3/1/98**Publication of Proceedings from "Innovations in Economic Development"**

Lee Munnich, Humphrey Institute

U.S. Department of Commerce
\$32,500 - 10/1/97-9/30/98**Swiftness of Adjudication as a Factor in Reducing DWI Recidivism**

Stephen M. Simon, Law School

Insurance Institute for Highway Safety
\$31,436 - 1/1/98-12/31/98**Neighborhood Planning for Community Revitalization Program in St. Paul**

Kris Nelson, Urban and Regional Affairs

Local Initiatives Support Corp.
\$15,000 - 2/1/98-1/31/99**Full Transportation Costs and Cost Incidence**

Gerard J. McCullough, Center for Transportation Studies

David R. Anderson, Center for Transportation Studies

St. of Minn., Department of Transportation
\$139,000 - 2/18/98-3/31/00**1997-98 Arts Midwest Performing Arts Touring Fund**

Sara Haugen, Student Activities, Morris

Sandy Olson-Loy, Academic Affairs, Morris

Arts Midwest
\$1,408 - 2/20/98-2/20/99

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>
 EGMS Help Line 612/625-1888

	name	number	e-mail
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration, information 624-5599			spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Tove Jespersen	624-0061	tove@ortta.umn.edu
Assistant Director (NIH, USDE, CDC, FDA, HRSA, DHHS)	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Foundations, DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Foundations, DHHS	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
USDA, DOJ, HUD (contracts only); USIA, AID, USDE, DHHS	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
USDA, DOJ, HUD (grants only); DHHS	Karen Sachi	626-0270	karen@ortta.umn.edu
NASA, DOD (AF, Army); misc federal (contracts only); DHHS	TBA	624-0288	ginny@ortta.umn.edu
DOD (Navy); misc federal (grants only); DHHS	Suzanne Marshall	625-1359	sue@ortta.umn.edu
USDA (contracts only); USDE, NIH, HRSA, FDA, CDC, DHHS	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
USDA (grants only); DHHS	Doug Johnson	624-4121	doug@ortta.umn.edu
Assistant Director (MN Technology, MN Health, NSF, VA)	Todd Morrison	624-5066	todd@ortta.umn.edu
NSF	Launa Shun	624-2521	launa@ortta.umn.edu
NSF	Sandy Kenyon	624-9567	sandy@ortta.umn.edu
Ag. associations, other private	Kate Tennesen	626-7718	kate@ortta.umn.edu
Voluntary health	Liz Li	624-0810	liz-l@ortta.umn.edu
St of MN, governments	Amy Levine	626-7441	amy-l@ortta.umn.edu
St of MN, governments	Tracy McClun	626-8265	tracy@ortta.umn.edu
Business and industry, Medical School	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Business and industry, Medical School	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Business and industry, health sciences	Gary Gillet	624-5571	gary@ortta.umn.edu
Business and industry, health sciences	Chris Coyne	626-8267	chris-c@ortta.umn.edu
Patents and Technology Marketing, information 624-0550, fax 624-6554			ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	TBA		
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	
Effort help line		625-7824	
Information Services			
Administrator	Mary Cybyske	624-6085	mcybyske@ortta.umn.edu
Duluth, Office of Research & Technology Transfer			
Sr. grant and contract administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Morris, Grants Development, http://www.mrs.umn.edu/services/grants			
Director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
	<u>related numbers</u>		
Sponsored Financial Reporting, fax 626-0321			
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of MN	Dan Hemauer	624-5007	dan-h@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Kerry Marsolek	624-8053	kerry@ortta.umn.edu
Supervisor, NIH, USDE	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs, fax 626-6061			
Director	Moira Keane	626-5654	irb@umn.edu iacuc@umn.edu

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For faculty changes, please call Staff Demographics, 200 Donhowe Bldg., 612/624-8374.
(Faculty labels are the ones with a string of numbers printed above the addressee's name.)

For changes regarding other labels, please complete the following:

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Research Review
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RESEARCH REVIEW

Office of Research and Technology Transfer

June 1998

New Licensing Associate Will Serve St. Paul Researchers

You can reach Jeff Carpenter at 624-6426, jeff@ortta.umn.edu

Protecting and licensing the inventions of researchers on the St. Paul campus is now the principal business of Jeff Carpenter, the new licensing associate in the University's Patents and Technology Marketing office.

Carpenter is one of St. Paul's own. He earned a Ph.D. in Carolyn Silflow's lab by analyzing a tubulin expression gene in *Arabidopsis*. He has coauthored articles for *Plant Molecular Biology* and *The Plant Cell* with Silflow and Peter Snustad.

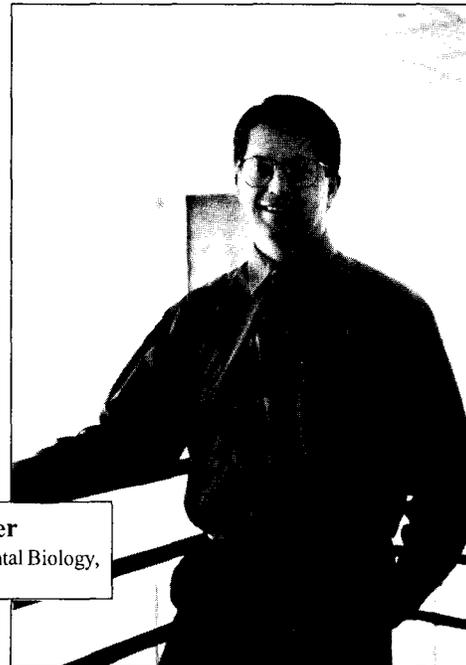
For PTM, Carpenter will concentrate on biotechnology and agronomic inventions, helping faculty to patent them, then bring them to commercial production and public use via licensing or start-up companies.

Since his 1991 Ph.D., Carpenter has spent most of his time developing products for SEEC, Inc., of Mendota Heights. From concept, to patent, to sales, SEEC develops products made of high-technology fabrics. Carpenter's role included grant proposals, business plans, marketing strategy, and sales.

Senator Paul Wellstone had the benefit of Carpenter's advice during the 1992-'93 Congress. As a legislative assistant on a Congressional Science Fellowship from the American Society of Plant Physiologists, Carpenter helped Wellstone's office understand the effects of science, energy, and environmental legislation.

Carpenter joined the "Entrepreneurial Training Program" at the University of St. Thomas last year, and took up consulting work for biotechnology companies, whom he advised about licensing opportunities, market research, and sources of capital.

He earned bachelor's and master's degrees in forestry at the University of Montana in '84 and '86.



Jeff Carpenter
Ph.D., Cell and Developmental Biology,
1991

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Indirect Cost Rates

The rates listed below come from the University's most recent indirect cost agreement, dated *May 19, 1995*. This date should be used where required on applications. For periods beyond June 30, 1999, the rates listed below are *provisional*.

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, please call ORTTA Sponsored Projects Administration, 612/624-5599. If you have questions on indirect cost rate development, please call Steve Bradley, 612/626-9895.

Predetermined Rates for 7/1/95-6/30/99

Research

On-campus	47.00%
Off-campus *	26.00%
SAFL on-campus	54.00%
SAFL off-campus *	26.00%
Hormel on-campus	50.00%
Hormel off-campus *	26.00%

Other Sponsored Activity

On-campus	35.00%
Off-campus *	26.00%

Instruction

On-campus	52.00%
Off-campus *	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 of Minnesota.

RESEARCH REVIEW

Volume XXVII, Number 12

June 1998

Editor: Phil Norcross

Editorial Assistant: Tove Jespersen

Interim Associate Vice President: Ed Wink

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

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, 612/625-2354, phil@ortta.umn.edu.

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, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Research Review is available electronically at <http://www.ortta.umn.edu>. It is also available on request to those who need it in other formats, such as Braille or audiotape.

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Fringe Benefit Rates

When submitting proposals, please use the following rates.

Graduate and Professional Student Assistants

New rates effective July 1, 1998

TA, RA, AF: standard	\$6.64/hr + 8.7%
TA, RA, AF: advanced master's or Ph.D.	\$1.16/hr + 8.7%
Summer quarter TA, RA, AF	— 8.7%
Summer session TA, with tuition	\$12.44/hr + 8.7%
Summer session TA, without tuition	— 8.7%
Professional program assistant	— 8.7%
Dental fellow *	\$4.04/hr —
Medical fellow *	\$3.32/hr —

To the rates listed above, add 7.7% when a graduate student is enrolled for fewer than 4 credits, or less than 1 credit for advanced master's students and Ph.D. candidates. How this new rule applies to summer terms is not yet clear, however. This charge is for Social Security (6.2%) and Medicare (1.5%).

* The additional 7.7% is never charged for dental fellows and is always charged for medical fellows. Hence the medical fellow rate totals \$3.32/hr + 7.7%.

For more information about GA job classes and fringe rates, contact George Green, associate dean of the Graduate School, 612/625-7368, green007@tc.umn.edu.

Other Job Classes

	Civil Service	Academic	Post-doc class #9546
7/1/97 - 6/30/98	28.2%	27.1%	14.0%
7/1/98 - 6/30/99	25.6%	27.1%	13.9%
7/1/99 - 6/30/00	27.6%	27.5%	14.3%

Fringe benefit rates are determined by the University's Business Services office; call Vivian Fickling, 612/624-2009.

Rate changes will be reflected in this section.

Your News Here?

Research Review welcomes contributions. It arrives in campus mail about the 10th of each month; it goes to press six working days before the end of the month. Contributions are due 11 working days before the end of the month. Contact Phil Norcross, editor, 612/625-2354, phil@ortta.umn.edu.

Sponsored Projects Administration

Question: What Type of Budget Detail and Justification is Needed for My Proposal?

Answer: Your budget must always comply with the sponsor's directions. Additionally, to facilitate the overall proposal and award process, the budget should be presented in a manner that is easily converted to the University's financial system and its "object/revenue" categories. A detailed budget justification is needed for all budget categories: personnel (including PI effort), consultants, equipment, supplies, travel, subcontracts/consortium costs, and "other."

For example, if the budget contains a category for supplies, detail as to the type and amount of supplies should be provided: "glassware - \$600, chemicals and reagents - \$2000," etc. This is very important when requesting dollars under the "other" category: "publication costs - \$1500, long distance phone - \$150, computer usage - \$1200." Providing this detail in the proposal will facilitate the account assignment and award set-up if the proposal is funded.

The University of Minnesota was required under federal cost accounting regulations to submit a disclosure statement (submitted June 28, 1996), which resulted in issuance of the policy on charging of direct and indirect costs. The policy says that administrative costs such as clerical staff salaries, general postage, recurring phone service, office supplies, photocopying, etc., cannot normally be charged as direct costs to federally sponsored projects. Exceptions may be made for major programs or those projects that meet special circumstances as defined in the policy. It is imperative, if including such costs in any federal proposal (prime or subcontract), that a complete justification defining the special circumstances be included with the budget submission.

If justification is not provided, and time permits, the grant administrator will contact the departmental administrator and/or the principal investigator for the necessary information and incorporate it into the proposal. If time does not permit, or the departmental administrator and/or principal investigator cannot be reached, the proposal will be submitted as received by ORTTA. An e-mail will be sent to the departmental administrator or the principal investigator requesting submission of the information. If the requested information is not received by the time of the award, a reminder will be sent and the account assignment and award set-up will be delayed.

by Mary Lou Weiss, assistant director, SPA

Research Animal Resources

Stone and Koniar are Award-Winning Animal Caretakers

The 1998 Patrick Manning Research Award was presented on May 19 at the annual Animal Care and Research Staff Appreciation Luncheon at Coffman Union's Great Hall.

Each recipient receives a plaque that is inscribed with the following: "Patrick J. Manning Research Award, 1998, In recognition of significant contributions to Biomedical Research and to the enhancement of the welfare of animals used in research." Additionally, each receives a \$500 honorarium.

The 1998 recipients are:

Brenda Koniar, senior veterinary technician, Research Animal Resources. Koniar's contributions included a very high dedication to the veterinary medical care of the animals in the facilities she monitors, together with complete and consistent follow-through on her observations; and

Laura Stone, graduate student, Graduate Program in Neuroscience. Stone's contributions included extremely high dedication to research-related public service, including a three-year term as the director of the student organization FACTS (Focus on Animals' Contributions to Science) together with visits and presentations to students at area schools and involvement with Brain Awareness Week activities.

After four years as chair of the Award Selection Committee, Greg Steinhagen is stepping down and will be replaced in 1999 by Michael Hoey, associate program director in the Department of Physiology.

by Greg Steinhagen, Research Animal Resources

In Morris and Duluth, NSF FastLane is a Local Call

Morris and Duluth faculty who wish to use NSF's FastLane system for submitting proposals electronically should contact their *local* grants offices.

In Morris, call Tom Mahoney, 589-6462, mahoneyt@caa.mrs.umn.edu.

In Duluth, call Jim Loukes, 726-7583, jloukes@ub.d.umn.edu.

Mahoney and Loukes can help investigators gain access and learn to use FastLane.

The St. Paul Campus Greenhouses:

The plan for the St. Paul greenhouse district says demolish all the greenhouses on Cleveland Ave. and some of the greenhouses on Gortner Ave., then build five new greenhouses and renovate the rest.

More detailed designs are now in the works, propelled by \$900,000 from the '98 legislature. Construction is scheduled to begin with funding from the year 2000 legislature.

The key players began planning new greenhouses when the 70-year-old "northwest greenhouses" on Cleveland Ave. were condemned in 1993. They were re-roofed with plastic in 1995, a stop-gap measure. When they come down, the University will lose 20 percent of its greenhouse space, at a time when undergraduate teaching and research requires just the opposite.

The greenhouses to be renovated will first get new floors and drainage systems to contain pesticides and fertilizers, then new environmental controls.

The new greenhouses will include automatic watering; computerized controls for temperature, light, ventilation, and humidity; high-performance ventilation and screening; and "level 3" containment to isolate diseases, insects, and transgenic plants. "Right now, you have to go to Ohio or Montana to work with quarantined exotic insects," says Dann Adair, greenhouse manager for the Plant Pathology department. "It's a long commute." The containment facility will serve both the University and the Minnesota Department of Agriculture.

The best glazing, however, is not hi-tech; the new houses will probably be roofed with glass, says Adair. It lets in more light than any plastic.

Research and teaching will be separated into different houses, to decrease traffic through research areas and make teaching more convenient to students.

The end result will be slightly less floor space under glass than the University has now, but room for more work. Rolling benches, for example, will mean less room for people and more room for plants. And central booking of space to investigators and teachers will prevent the old inefficiency by which one department could have idle rooms in its greenhouse, while another's house was overflowing.

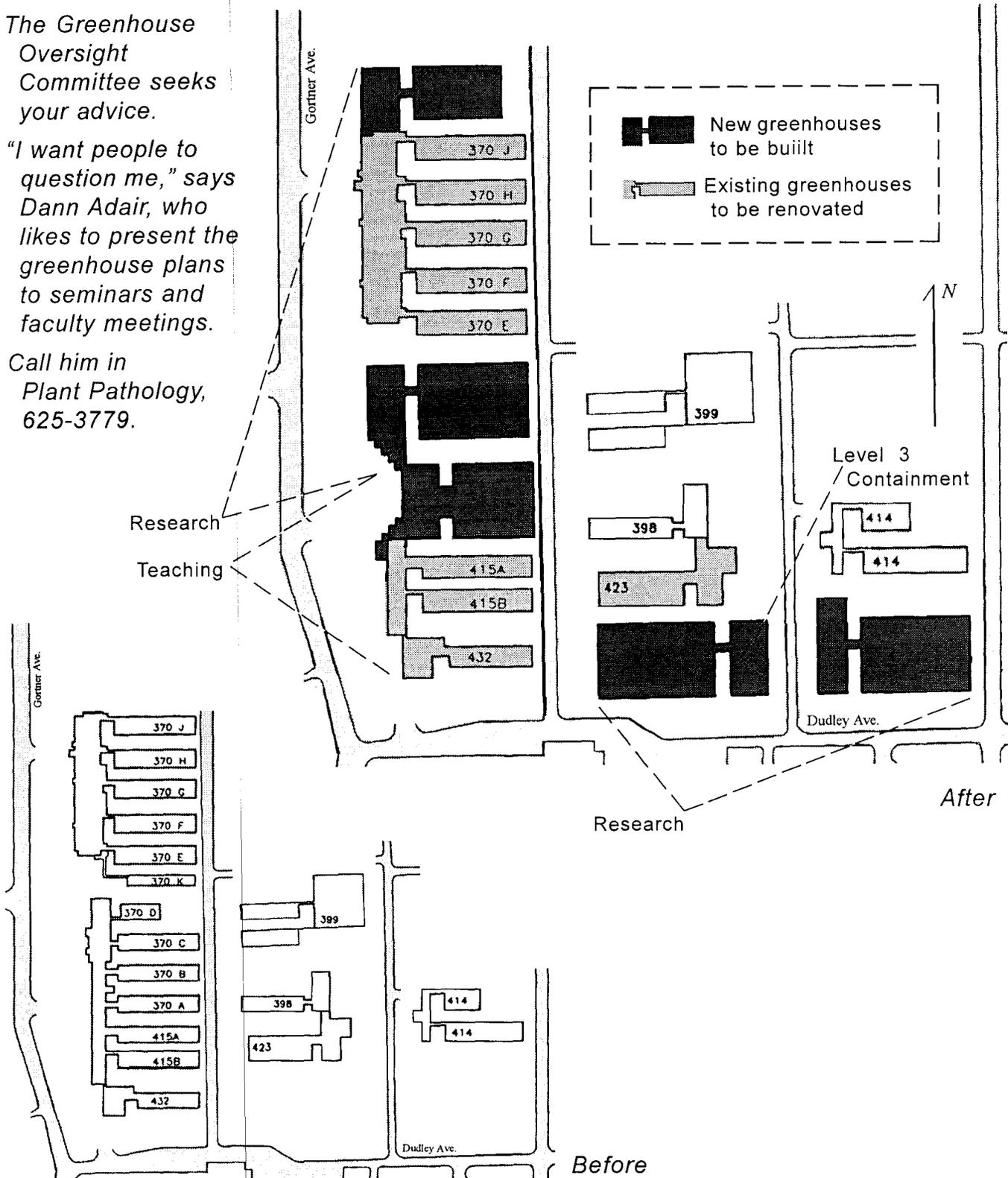
The greenhouses serve eleven departments in three colleges—CoAFES, CBS, and CNR. At last count, 2,379 people use them every year.

Renovation, Replacement, & New Efficiencies

The Greenhouse Oversight Committee seeks your advice.

"I want people to question me," says Dann Adair, who likes to present the greenhouse plans to seminars and faculty meetings.

Call him in Plant Pathology, 625-3779.



U. Policies on Web Rearranged According to “Work Processes”

The University’s Policy and Process Development Office recently announced a rearranged web site to help faculty and staff find the policies they seek.

Links are arranged according to various tasks—serving students, for example, and managing sponsored projects.

“Say, for example, you want to actively solicit gift money and you want to be prepared by knowing all of the policies and procedures related to fundraising,” says the March 1998 issue of *Policy News Chronicle*. “Go to the Process Page, click on Managing University Assets, then

click on Fundraising. A screen will appear that lists all U-wide policies related to the process of fundraising. Click just one more time on the policy you would like to read and you’re done.”

The site also includes a search engine, says the *Chronicle*, that covers *all* policies at the University: financial, administrative, senate, regents, and human resources.

For more information, call the University Policy and Process Development Office, 612/624-1611.

The screenshot shows a Netscape browser window titled "University of Minnesota Processes - Netscape". The address bar shows "http://mac.finop.umn.edu/test/process.html". The main content area features the University of Minnesota logo and the heading "University-wide Policies organized by process". Below this, there is a list of categories with radio buttons for selection:

- PROVIDE FACULTY & STAFF SERVICES (compensation, employee relations, development)
- PROVIDE STUDENT SERVICES (recruiting, admission, student support)
- PROVIDE EXTERNAL SERVICES (selecting, orientation, partner support)
- MANAGE UNIVERSITY ASSETS (sponsored projects, revenue, purchasing)
- MANAGE UNIVERSITY INFORMATION (information technology, policy & process, ethics)

A smaller browser window is overlaid on the "Provide External Services" category, displaying a list of links:

- Selecting Partners
- Orientation
- Supporting Partners
- Redefine Partnership

Below this list, another section titled "Manage University Assets" contains a list of links:

- Planning & Analysis
- Budgeting
- Incentives for Managed Growth
- Fundraising
- Health and Safety
- General Accounting
- Accepting & Depositing Revenue
- Managing Sponsored Projects
- Managing U Property
- Paying Employees
- Purchasing
- Financial Oversight

University Policies Need to be Written in Plain English

by Fred L. Morrison, Popham Haik Schnobrich/Lindquist & Vennum Professor of Law and vice-chair-elect, Faculty Consultative Committee

University policies need to be written in plain English. They need to be readily accessible to every faculty and staff member. If we want accountability, we must provide standards that people understand and can find. The "plain English" movement has reformed the law over the past decade. It should also reform University policies.

Your auto insurance used to say "If the Insured purchases a motor vehicle for which the Insured seeks additional coverage under the terms of this agreement, the Insured will inform the Company in a writing directed to it at its principal place of business within thirty (30) days of acquisition of title to the aforesaid motor vehicle." Now it says "If you buy a new car or truck, you will tell us in writing within 30 days."

We could take a lesson from that. Accountability requires understanding. Understanding requires language that is simple and direct. It says what it means, and is not dependent upon some special definition buried somewhere else in the document.

"Accessibility" is the second element. Accessibility means more than making policies available on the Internet or in book form. It means organizing that material in ways that are meaningful to the users. Present policies are organized in ways that are meaningful primarily to the bureaucracies that administer them, not to the faculty and staff who must comply with them. There are different levels of policies (Regents', University, Financial, Human

Resources, etc.) and also procedures (that may limit or define the application of the policies). They are organized into "articles" and "sections" and "sub-sections." Each of them uses a different set of definitions of terms. The search engines available through the Internet sites will help you only if you already know the key words that were used when the policy was written.

A policy is accessible only if it is written in a language that is understandable and organized in a way that is meaningful. At present, only policy *afficiandos* even know where to look for the applicable rules, and sometimes even they can't find them. This really turns University policies into traps for the unwary. I am proud of my profession, but I don't think you should need a lawyer to understand or find University policies.

We need a good faculty and staff handbook that sets forth the basic policies in easily understandable terms. It should tell people the policies in plain and simple language. It might contain cross-references to the formal documents from which it was drawn (whether they were originally written in Medieval Latin or the more common Bureaucratic English), so that one could turn there for the fine details, if needed, although I would prefer to reform those policies, as well.

This is the "transparency" that the NIH is demanding of us. We should be demanding it of ourselves. It is only common sense.

The screenshot shows a web browser window with a navigation menu on the left and a policy document on the right. The navigation menu includes categories like 'Manage University Assets', 'Plan & Analyze', 'Account', 'Manage Assets', and 'Financial Oversight'. The policy document is titled 'Charging of Direct and Indirect Costs' and includes a 'Policy Statement' section.

Navigation Menu:

- Manage University Assets
- Plan & Analyze: Planning & Analysis, Budgeting, Incentives for Managed Growth, Fundraising, Health & Safety
- Account: General Accounting
- Manage Assets: Accepting & Depositing Revenue, Managing U Property, Paying Employees, Purchasing
- Financial Oversight: Financial Oversight, Monitoring Performance, Managing Investments

Policy Document: Charging of Direct and Indirect Costs

Academic/Administrative Policy 2.1.3
Effective August 1996

The following are responsible for the accuracy of the information contained in this document:

- Responsible University Officer: Associate VP for Research and Technology Transfer
- Responsible Office: Research and Technology Transfer

Policy Statement

This policy establishes consistent practices for defining, charging, and coding direct and indirect costs to University accounts. These practices must be consistently applied in like circumstances for all accounts (federally sponsored accounts and all others). Those involved in charging costs to university accounts must understand and comply with this policy in order to:

Policy List:

- Academic Misconduct
- Animal Care and Usage
- Charging of Direct and Indirect Costs
- Code of Conduct
- Conflict of Interest
- Effort Certification
- General Delegations
- Guidelines for Cost Sharing and Matching Funds for Sponsored
- Guidelines for Cost Transfers
- Guidelines for Establishing Accounts for Pending Awards
- Guidelines for Research Investigators and Creative Artists
- Intra-University Consulting Fees
- Managing Program Income Earned on Sponsored Projects

Human Subjects Committee: IRB

Questions and Answers about Including Children in Research Projects

The *May Research Review* presented the revised NIH requirement to include children in NIH studies. This article will expand on the application of those guidelines to *all* research reviewed by the University of Minnesota Institutional Review Board: Human Subjects Committee (IRB).

The IRB is aware that the new guidelines create a peculiar dichotomy for researchers and for the IRB. On the one hand, the IRB expects that researchers will include children in their study populations; while at the same time, the IRB must restrict inclusion of children to studies where there is some expectation of benefit. Children remain a protected class of subjects.

Do the new guidelines apply only to medical and/or drug research?

No. The new guidelines apply to all research, including biomedical and behavioral research.

If a research proposal is "exempt" from full IRB review as described in IRB and federal guidelines, do I still have to include children or provide justification for an exception?

Yes. The new guidelines do apply to research considered exempt from full IRB review. Some educational research and retrospective studies do include children in their populations.

Why do we have to apply an NIH rule to all research at the UM/Fairview Systems?

The University of Minnesota holds a "multiple project assurance" with the NIH Office for Protection from Research Risks (OPRR). In that agreement this institution assures the OPRR that we will apply all research guidelines to all projects, irrespective of their funding sources. Therefore, this IRB must apply the NIH standards for inclusion of children to *all* research involving human subjects. Based on the affiliation agreement between the University of Minnesota and the Fairview Health System, and supported in "inter-institutional agreements" filed with OPRR, the same rules apply to Fairview researchers.

How do we define "children" in Minnesota?

This IRB's definition of children is anyone under age 18 as defined by Minnesota law. (The NIH guidelines indicate 21 years of age to cover all states).

Does this mean that the federal guidelines for inclusion of children have been relaxed from previous versions of the rules?

No. It is important to note that while the expanded guidelines seem more permissive and in fact require the

inclusion of children or a rationale for their exclusion, there has been no revision in 45 CFR 46 subpart D which requires justification for the inclusion of children. This will result in a somewhat mixed message from the IRB:

You must justify the inclusion of children based on risk (because of subpart D).

At the same time,

You must justify any exclusion of children (because of the new guidelines).

How is the IRB going to help researchers figure out how to navigate these new rules?

The IRB and its staff are sympathetic to the task and will try to assist researchers in preparing applications for IRB review. Here's how:

Application forms for IRB review are being modified to include new sections on children as participants.

Applications should describe plans to include children, or should provide ethical and scientific rationale for their exclusion (see page 10).

The NIH "decision tree," which accompanied the new guidelines, has been adapted by the UM IRB (see illustration at right).

Are there different requirements for consent for children in studies?

Yes. Parental permission is required for most studies and is documented in a written consent form similar to one used for an adult participant. The child's assent to participate should be obtained and documented in an "assent form" written in language that can be understood by a child. (This IRB requires written documentation of assent at age eight).

Does the IRB have the expertise necessary to review research including children?

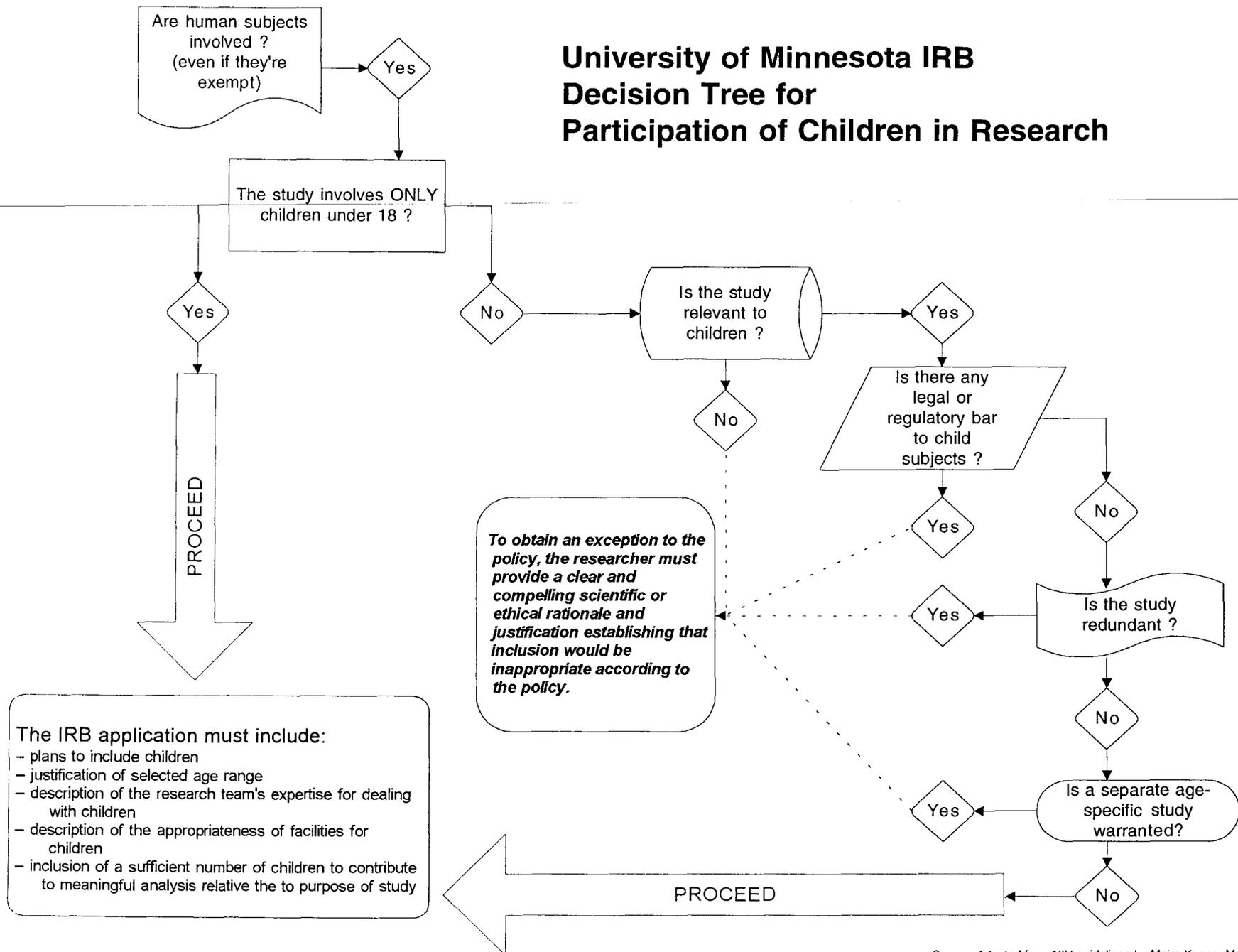
Yes. This IRB has anticipated the expansion of inclusion of children and has long maintained "child experts," both medical and behavioral, on all five of the review panels.

When will the new policy take effect?

The new policy applies to all applications and proposals submitted to NIH for deadlines after October 1, 1998. The IRB will begin to apply these guidelines now, but will enforce the requirement on October 1, 1998.

{continued on page 10}

University of Minnesota IRB Decision Tree for Participation of Children in Research



My research project is subject to FDA rules also; is there agreement between OPRR and FDA?

Yes. In fact, the Food and Drug Administration (FDA) has established a requirement for new drug applications (NDAs) indicating that pediatric populations should be studied and pediatric formulas established for new drug approval submissions to the agency. Study sponsors are now required to submit research protocols that include children, or provide justification for the exclusion of children, just as noted in the NIH guidelines.

To quote from the proposed FDA rule: "The Food and Drug Administration (FDA) is proposing new regulations requiring pediatric studies of certain new drug and biological products. Many new drugs and biological products represent treatments that are, at least at times, the best available treatment for children, but most of them have not been adequately tested in the pediatric subpopulation. As a result, product labeling frequently fails to provide directions for safe and effective use in pediatric patients. The proposed rule would attempt to partially address this lack of pediatric use information by requiring that manufacturers of a limited class of new drugs and new biological products provide sufficient data and information to support directions for pediatric use for the claimed indications, before or soon after approval. Manufacturers of a limited class of marketed drugs and biologics would also in compelling circumstances have to provide such data. This proposed rule is part of a comprehensive effort to increase the number of new drugs and biological products with clinically significant use in children that carry adequate labeling for use in that subpopulation."

Where can I go for more information on these requirements?

The Institutional Review Board: Human Subjects Committee (IRB) maintains a web site with links to many sources of information. Please visit <http://www.research.umn.edu/subjects.htm>.

Pertinent to this topic are the web site's "informed consent tutorial" and sections of the "guide" that apply to children.

For more information, see the "NIH Policy and Guidelines on the Inclusion of Children as Participants in Research Involving Human Subjects," *NIH Guide*, 6 March 1998, <http://www.nih.gov/grants/guide/1998/98.03.06/>.

For more information on the FDA proposed rule, see "Regulations Requiring Manufacturers to Assess the Safety and Effectiveness of New Drugs and Biological Products in Pediatric Patients," <http://www.fda.gov/cder/guidance/pedrurule.htm>.

by Moira Keane
director, Research Subject Protection Programs

Seven Ethical and Scientific Rationales for Excluding Children from Research Projects

NIH has named seven reasons to exclude children from a study:

- The research topic is irrelevant to children; for example, the medical or social condition under study is found only in older persons.
- There are laws or regulations barring inclusion of children. (No Minnesota laws prohibit inclusion of children.)
- The knowledge being sought is already available for children or will be obtained from another ongoing study; an additional study would be redundant. (Researchers must provide the IRB with sound scientific justification).
- A separate age-specific study in children is warranted and preferable; for example, because of the relative rarity of a condition in children compared to adults, extraordinary effort would be needed to include children, or considerable effort has been spent to assemble the adult population under study, or the number of children is limited because the majority are already accessed by a nationwide pediatric disease research network. Issues of study design may preclude direct applicability of a hypothesis and/or intervention to both adults and children; such issues include differences in cognitive, developmental, or disease stages, or different age-related metabolic processes. Exclusion may be permitted in such cases, but researchers may be asked to consider taking these differences into account in the study design or expanding the hypothesis to include children.
- Insufficient data are available to judge the risk to participating children. (In this case, one of the research project objectives could be to obtain sufficient adult data to make this judgment.)
- The study involves follow-up on a previous study of adults. (Permitted in already established longitudinal follow-up studies.)
- Other special cases are found acceptable by review groups and the institute NIH director. (It is unclear at this time what the NIH/OPRR will allow under this section.)

Adapted from NIH policy and guidelines by Moira Keane

ORTTA

PIs Must Report Some Effort on Every One of their Sponsored Projects

A principal investigator, by definition, always has some role in his or her sponsored projects. It may take just a small portion of the PI's time, as little as one percent, but a PI who devotes no time to a project appears not to oversee the project's activities.

In other words, proposals must plan for, and quarterly "Effort Certification Statements" must report some effort from PIs on each and every one of their sponsored projects.

PIs must plan for and accurately report the portion of time they give to each project *even when the sponsor will not pay for that time*. For NSF projects, for example, SPA typically receives budgets that do not include PI salaries during the academic year; that expense is paid from some University account.

That practice is called "cost sharing"—NSF and the University share the cost of the sponsored project.

To double-check exactly which projects are the responsibility of which PIs, consult the quarterly reports from

ORTTA titled "Sponsored Project Employee Summary Report" (see illustration). They are rosters of all the people—including the PI—paid from a given sponsored account in the previous quarter.

If a given project appears to be missing from a PI's responsibilities, it may be the result of failing to include the PI's effort in the proposal. To fix the problem, notify ORTTA's effort staff.

"All Principal Investigators (P.I.s) must still record their total effort to any given sponsored account even if the effort is LESS than 5%, i.e. in order to be a Principal Investigator, a minimum amount of effort must be devoted to reflect the P.I.'s *scientific and administrative direction of the project*." —"Effort Certification," UM Academic/Administrative Policy 2.1.1, September 1995 (http://WWW.fpd.finop.umn.edu/2/Sec1/Pol211/Effort_Certification.html).

UNIVERSITY OF MINNESOTA					
SPONSORED PROJECT EMPLOYEE SUMMARY REPORT				QUARTER 5 FY-98	
The purpose of this report is to provide the Principal Investigator with a summary of employees who are either paid from or contributing effort to the referenced project during the indicated time period. If this report is missing employees or includes employees that should not be listed, contact your department administrator and or effort coordinator immediately to discuss any changes that should be made to the effort statement and/or payroll. This report does not require signature verification of the principal investigator nor is it university requirement to maintain it for recordkeeping.					
<i>Prior approval from the federal sponsoring agency is required for the absence of more than three consecutive months, or a 25 percent reduction in effort devoted to a federal sponsored project in comparison to the approved budget plan, by the approved project director or principal investigator.</i>					
Principal Investigators: Area:		SAMPLE, FLORA 699 - DEPT OF FUTURE CURES			
<u>CUFS Account</u>	<u>Payroll Account</u>	<u>Award Dates</u>	<u>Agency and Contract</u>	<u>Account Title*</u>	
1697 - 699 - 1313	8888 - 8888	02/32/97 - 02/32/99	NIH-NATIONAL INSTITUTE OF SOME DISEASES NIH/5R13-HD33333-03	FUTURE CURES	
<u>Employees Charged to This Account</u>		<u>Payroll Class</u>	<u>Effort Statement Sent to Area</u>		
SAMPLE, FLORA X		9401 PROFESSOR	688		
ANDERSON, ALICE A		7945 SP SR LAB TECH	688		
JOHNSON, JOHN J		2233 STUDENT LAB ATTENDNT	688		
ANDERSON, ANDY A		4946 TU PRIN LAB TECH	688		
*The account title as it appears can be changed in the Effort Reporting System to enhance project recognition by indicating the name in the space provided. The Effort Coordinator will notify ORTTA Effort Reporting of the request.					
Please Change Account Title To: _____ (not to exceed 56 characters)					

Recent Publications by University Authors

Arts, Humanities, Social & Behavioral Sciences

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**Please send your new citations to
phil@ortta.umn.edu.**

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More Information

To receive copies of NIH and NSF application kits, please call 612/624-0061, gopher@ortta.umn.edu.

For funding searches, please contact the Office of the Vice President for Research, 612/625-7585, facgrant@gold.tc.umn.edu, <http://www.research.umn.edu/research.html>.

■ National Science Foundation Faculty Early Career Development Program

Outstanding new faculty who intend to develop academic careers involving both research and education are encouraged to apply for support under the Faculty Early Career Development Program (CAREER). CAREER awards are not intended for senior or highly experienced investigators who already have established independent research careers. The CAREER program is an NSF-wide activity encompassing all areas of research and education in science and engineering normally supported by NSF. To be eligible for a CAREER award, applicants *must meet all* of the following requirements (some exceptions apply; see the announcement):

- be employed at a U.S. institution of higher education;
- be in their first or second full-time tenure-track academic appointment and have begun the first tenure-track or tenure-track equivalent appointment on or after July 1, 1994;
- not be tenured or have held tenure on or before July 22, 1998;
- not be a current or former recipient of an NSF PECASE, Presidential, NSF Young Investigator, or NSF CAREER award, or a Presidential Faculty Fellowship.

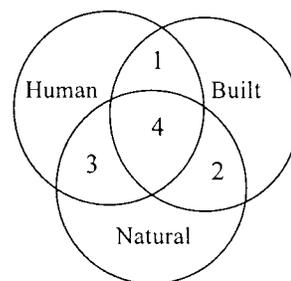
Each year, NSF expects to make approximately 350 new CAREER awards. Awards, including indirect costs, will range from a minimum of \$200,000 to a maximum of \$500,000 over a four- to five-year period.

The application deadline is **July 22, 1998**. The full announcement may be accessed at <http://www.nsf.gov/cgi-bin/getpub?nsf98103>.

■ National Science Foundation Urban Research Initiative

The goal of the Urban Research Initiative (URI) is to support interdisciplinary research to achieve broad understanding of urban environments, and the processes that determine or constrain the nature and direction of change in urban environments.

The urban environment can be characterized as the place where built, human, and natural environments co-exist and interact (see diagram). Research in URI must fit into a context that addresses issues at the intersections of these environments, indicated by any of the numbered areas in the diagram. Examples of research in each diagram intersection are:



Area 1 Human/Built: equity, accessibility, valuation, life cycle issues, impact of housing, transportation, and information infrastructure on urban communities.

Area 2 Built/Natural: urban ecology, environmental technology, deterioration, tradeoffs.

Area 3 Natural/Human: diversity, access to nature, resource management, and development.

Area 4 Human/Built/Natural: optimization, systems analysis, full-scale valuation, decision sciences, political science, disaster and hazard prediction, response and mitigation, education to strengthen informed citizenry.

A broad agenda for urban research was developed at a July 1997 NSF workshop. Investigators are encouraged to refer to the final report of the workshop as they develop proposals for this competition. See <http://www.sbe.nsf.gov>. Investigators are also strongly encouraged to contact NSF staff listed in the announcement.

Award durations of two to three years will be considered and average award levels are anticipated to be \$300,000 to \$500,000. Approximately 10 to 20 awards will be made.

The proposal deadline is **July 17, 1998**. The full announcement may be accessed at <http://www.nsf.gov/cgi-bin/getpub?nsf9898>, or contact Frank Scioli at 703/306-1761, fscioli@nsf.gov.

■ Agency for Health Care Policy and Research

The Agency for Health Care Policy and Research (AHCPR) has announced its latest research priorities. A requested \$25 million increase for research on improving healthcare quality could significantly boost award numbers for next year. The new priorities reflect the agency's increasingly targeted emphasis on research that will support improvements in health outcomes and strengthen quality measurement and quality improvement. Priorities apply to full applications and to small grants.

Of special interest is research that will produce findings in one to three years and results that can be put into practice quickly. Priorities include:

- Effectiveness and cost-effectiveness of clinical and organizational interventions, with particular emphasis on the outcomes of care provided to the elderly and those with chronic diseases.
- Effects of computerized decision-support systems, targeted information systems, electronic medical records, and other information technology applications on improving quality of care.
- Methods to implement evidence-based information and tools in diverse settings and populations.
- Evaluation of clinical prevention services for individuals of all ages.
- Development and testing of functional status and quality of life measures.
- Development and validation of measurement tools for use with diseases, conditions, and procedures where knowledge gaps exist.
- Causes of variations in clinical practice.
- Impact of trends in healthcare prices, costs, and sources of payment.
- New healthcare purchasing activities by employers, coalitions, and government and their impact on managed care organization, providers, employees, and communities.
- New and more effective ways to measure the range of healthcare costs.
- Clinical decisionmaking in primary care.

For further information access the announcement PA-98-049 at <http://www.nih.gov/grants/guide/index.html>.

■ Pediatric AIDS Foundation Programs for Research in Pediatric HIV/AIDS

The Elizabeth Glaser Pediatric AIDS Foundation announces the availability of funding for 1) one-year and 2) two-year pediatric research grants, 3) two-year pediatric scholar awards, and 4) pediatric short-term scientific awards. The foundation is interested in funding creative and innovative research ideas not yet suitable for funding by other agencies. All proposals should fall within any of the following research areas, or other areas that have direct relevance to pediatric HIV/AIDS.

- Transmission of virus from mother to infant.
- Pathogenesis of HIV infection.
- Mucosal immunity to HIV (including studies of the pediatric GI tract).
- Characterization of immune response to HIV.
- Central nervous system and HIV.
- Role of the placenta in facilitation of, or protection from, HIV infection.
- Host genetic factors that increase or decrease susceptibility of the neonate to perinatal HIV infection.
- Vaccine development.
- Breast-milk transmission.
- Other critical areas highly relevant to pediatric HIV/AIDS research.

Up to \$80,000 is available for each one-year and two-year pediatric research grant. An investigator may seek funds to support a nested study which is complementary to research funded by other institutions. Up to \$66,000 is available for two years of salary support for pediatric scholar awards. Pediatric researchers with M.D.s must have two to three years of post-doctoral experience to be eligible; this requirement is waived for Ph.D.s and D.V.M.s. Tenured senior investigators are not eligible. Short-term scientific awards provide \$5,000 for any small project or portion of a project that can be accomplished in a short period of time. Awards are intended to facilitate exchanges of information and the acquisition of specialized skills within the foundation's areas of concern.

A letter of intent on the appropriate form must be submitted by **July 22, 1998**. Full proposals will be invited. For further information contact the agency in care of Trish Devine, Programs Director, Elizabeth Glaser Pediatric AIDS Foundation, 2950 31st Street, Suite 125, Santa Monica, CA 90405, 310/395-9051, fax 310/395-5149, research@pedaids.org. You may access the foundation's web site at <http://www.pedaids.org>.

NIH, NIAMS

Study of Efficacy of Glucosamine and Chondroitin Sulfate in Osteoarthritis NIH-NIAMS-98-2

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), in collaboration with the Office of Alternative Medicine, is seeking a contractor to design and conduct a multicenter clinical trial.

The purpose is to determine whether the oral administration of glucosamine alone or in combination with chondroitin sulfate to patients with symptomatic osteoarthritis of the knee is effective in improving pain and function. The primary outcome of the study is improvement in pain. The study will be a randomized, double-blind, placebo-controlled, short-term treatment trial of patients with radiographic and clinical evidence of unilateral or bilateral knee osteoarthritis. The entry criteria, randomization procedures, analyses, and other components of the study protocol will be designed by the offeror.

It is anticipated that one award will be made for a period of three years and six months. RFP NIH-NIAMS-98-02, with a proposal deadline date of **August 31, 1998**, may be accessed at <http://www.nih.gov/niams/grants/rfp/rfp1ist.htm>. For further information contact Eileen Webster-Cissel, Contracts Management Branch, NIAMS, 45 Center Drive Room 5AS13A, MSC 6500, Bethesda, MD 20892-6500; 301/594-2543, fax 301/480-5996, ew52c@nih.gov.

National Institute of Justice

Cross-National Crime Research Challenge Grants

The National Institute of Justice (NIJ) is soliciting proposals for research on crime and criminal behavior of a cross-national and comparative nature. Each project supported by NIJ must have counterparts to conduct parallel research outside of the United States. These counterparts may be supported by government agencies or departments, private nonprofit organizations, or universities of other nations.

NIJ intends to support up to five research challenge grants to U.S. based researchers to conduct the U.S. part of these comparative studies for a total of up to \$500,000.

The application deadline is **September 1, 1998**. For a copy of the solicitation, call NCJRS 800/851-3420 or the U.S. Department of Justice Response Center 800/421-6770. Electronic copies may be accessed at <http://www.ojp.usdoj.gov/nij/funding.htm> or <http://www.ncjrs.org/fedgrant.htm#nij>. Refer to document No. SL000277.

U.S. Department of Agriculture

National Needs Graduate Fellowship Program

The Cooperative State Research, Education, and Extension Service (CSREES), U.S. Department of Agriculture, is giving notice that a competition for new graduate fellowship grants *will not* be held during FY 1998. However, CSREES announces that applications for supplemental grants for special international study or thesis/dissertation research travel are being invited. Institutions eligible to receive supplemental grants are those that have active National Needs Graduate Fellowship Grants that were awarded in FY 1997 or earlier.

Before the international study or thesis/dissertation research travel commences, a fellow must have completed one academic year of full-time study and arrangements must have been formalized for the fellow to study and/or conduct the research. The fellow must have sufficient time to complete the international experience before the termination date of his/her fellowship grant.

For each travel allowance, the institution may request up to \$5,000. Separate applications must be submitted on behalf of each fellow requesting funds.

Supplemental grant proposals must be received by **February 16, 1999**. For further information contact Dr. Howard Sandberg, USDA/Higher Education Programs, 202/720-2193, fax 202/720-2030, hsandberg@reeusda.gov.

National Institute of Justice

Analysis of Existing Data

The National Institute of Justice (NIJ) is seeking applicants to conduct original research using data from the National Archive of Criminal Justice Data. Of particular interest are studies that will replicate findings from previously supported NIJ research, use archived data sets containing similar information collected at different times or from different sites, apply alternative or emerging statistical techniques and methodologies to archived data sets that extend the understanding of criminal justice processes and criminal behavior, and conduct research on archived data sets that explore the development of applications of direct benefit to practitioners.

Awards will be awarded for up to \$35,000 for a nine-month period. The application deadlines are **August 15, 1998**, and **December 15, 1998**. For a copy of the solicitation, please call NCJRS 800/851-3420 or the U.S. Department of Justice Response Center 800/421-6770. Electronic copies may be accessed at <http://www.ojp.usdoj.gov/nij/funding.htm> or <http://www.ncjrs.org/fedgrant.htm#nij>. Refer to document No. SL000278.

■ Gunk Foundation

The Gunk Foundation offers grants for "public" art projects that "make it out of the museum, gallery, and alternative spaces and into the spaces of daily life," such as public transportation, city streets, and work-places. Proposed projects must satisfy the foundation's definition of public art, reach a diverse and/or non-traditional art audience, and should broach historical, social, environmental, political, or cultural issues. The work should be relevant to the cultural/social situation in which it is seen, and the site of the work should enhance its meaning as well.

The Internet *does not* fit into the foundation's definition of the public domain, due to its prohibitive access costs and limited audience. Grants also are not usually made to fund production of video or film unless it has been specifically earmarked for a public space, such as public access television or outdoor screenings.

Grants range between \$1,000 and \$5,000; they are made to individuals and organizations, nationally and internationally. Established and unestablished artists are eligible.

Application deadlines are **April 30** and **October 31** annually. For further information send an SASE or an e-mail to Nadine Lemmon, Gunk Foundation, PO Box 333, Gardiner, NY 12525; gunk@mhv.net, <http://www.gunk.org>.

■ John M. Olin Foundation

The John M. Olin Foundation plans to give away all of its assets, currently valued at \$115 million, in the next seven to 10 years. Awarding \$18.5 million in 1997 and planning to distribute \$20 million in 1998, the foundation continues to demonstrate a commitment to preserving the principles of political and economic liberty. The foundation's grantmaking concentrates on four areas: 1) public policy research, 2) American institutions, 3) law and the legal system, and 4) strategic and international studies.

Financial support is awarded for research, institutional support, fellowships, professorships, lectures, conferences/seminars, books, scholarly journals and journals of opinion, and, sometimes, for television and radio programs.

Public policy research grants support research on the formulation, implementation, and evaluation of policy in the social and economic fields. In the American institutions category, funding supports studies of the Constitution, the

operation of American political institutions, and the moral and cultural principles on which the institutions are based. Awards are made to public interest law and studies related to the legal system, jurisprudence, and the relationship between the law and economics. Limited funding is available to support projects in the strategic and international studies grant category which addresses the relationship between American institutions and the international context in which they operate, including studies of American foreign policy, the international economy, and national security.

Proposals may be submitted **at any time**. Interested nonprofits may apply by submitting a "concise and relatively brief" written proposal describing the project and grant request and offering background on the organization and its current sources of funding. For further information contact James Piereson, Executive Director, John M. Olin Foundation, 330 Madison Avenue 22nd Floor, New York, NY 10017; 212/661-2670, fax 212/661-5917, inquiry@jmof.org, <http://www.jmof.org>.

■ United States Institute of Peace

The United States Institute of Peace invites applications for Peace Scholar awards offered by its Jennings Randolph Program for International Peace. These fellowships are intended to support the research and writing of dissertations addressing the sources and nature of international conflict and the full range of ways to prevent or end conflict and to sustain peace.

Dissertation projects from all disciplines are welcome. Priority will be given to projects that contribute knowledge relevant to the formulation of policy on international peace and conflict issues.

The institute expects to award at least 10 Peace Scholar fellowships for 1999-2000. Doctoral students at U.S. universities who will have completed all requirements for the doctoral degree except the dissertation by September 1999 are eligible to apply. Citizens of any country are welcome to apply. Stipends are \$14,000 for 12 months.

The application deadline is **November 16, 1998**. For further information contact the United States Institute of Peace, Jennings Randolph Program for International Peace, 1550 M Street NW Suite 700F, Washington, DC 20005-1708, 202/429-3886, fax 202/429-6063, jrprogram@usip.org, <http://www.usip.org>.

■ Procter & Gamble

International Program for Animal Alternatives

Once again Procter & Gamble is sponsoring the International Program for Animal Alternatives. The purpose of this program is to provide funds for research in biological sciences; specifically, to fund the development and the scientific validation of replacements for, or improvements in, current animal methods for efficacy and safety testing used in the development of new drugs and other consumer products. Key aspects of the development and validation of new alternative methods are:

1. New in-vitro biochemical and cellular approaches to efficacy and safety testing that could replace in vivo testing methods;
2. Noninvasive in vivo methods for evaluating drug efficacy and safety that reduce the distress imposed on animals;
3. The identification of new procedures or models to reduce the use of animals or the distress imposed on animals;
4. Scientific validation of previously developed alternative methods where validation is important to widespread acceptance of the method.

Areas of particular interest are irritation, contact hypersensitivity, aging, hair growth, photoprotection/photodamage, photo co-carcinogenesis, and hyperpigmentation disorders. Preference will be given to proposals which incorporate computer modeling, molecular biology, or mechanism-based in vitro biochemical or cellular methodology which could reduce or eliminate the need for in vivo tests.

Three proposals will be funded. Maximum funding for each awarded proposal will be \$75,000 per year for up to two years. Proposals will be accepted from any academic or nonprofit research institution worldwide.

The application deadline is **August 15, 1998**. Proposals must be prepared on agency forms. ORTTA has a few of these (call 624-0061 or write to gopher@ortta.umn.edu); or you may contact the agency by phone at 513/627-1715, fax 513/627-1153, or extresprgim@pg.com.

■ Department of Defense

Defense University Research Instrumentation Program

The Department of Defense announces the FY 99 Defense University Research Instrumentation Program (DURIP), administered through the Army Research Office, the Office of Naval Research, the Air Force Office of Scientific Research, and the Science and Technology Directorate of the Ballistic Missile Defense Organization. DURIP is designed to improve the capabilities of U.S. universities to conduct research and to educate scientists and engineers in areas important to national defense by providing funds for the acquisition of research equipment.

The research areas of interest to the participating agencies are described in the broad agency announcements issued by these agencies:

- USARO: <http://www.aro.army.mil>;
- ONR: <http://www.onr.navy.mil> (select Science and Technology);
- AFOSR: <http://www.afosr.af.mil>;
- BMDO: <http://www.acq.osd.mil/bmdo/bmdolink/html/intro.htm>.

No proposals requesting less than \$50,000 nor more than \$1 million will be considered. Cost sharing is encouraged.

The application deadline is **August 20, 1998**. For a complete copy of the announcement access <http://web.fie.com/htdoc/fed/afr/afo/edu/text/min/afrdurip.htm>. Refer to BAA 98-5.

Faculty Research, Training, and Service Awards

This section contains statistics on proposals and awards recently processed by ORTTA. In addition, we have 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 1998	277	\$71,309,941
Awards Processed		
April 1998	346	25,271,702
Proposals Submitted		
July 1997 - April 1998	3,297	682,924,513
Awards Processed		
July 1997 - April 1998	2,542	316,479,066
Proposals Submitted		
July 1996 - April 1997	3,199	515,402,182
Awards Processed		
July 1996 - April 1997	2,390	276,723,049

Tethered Domains as Regulatory Elements

Leonard J. Banaszak, Biochemistry, Medical School
Washington University
\$29,625 - 1/1/98-12/31/98

Visualization of a T Cell Response to *Salmonella typhimurium*

Marc K. Jenkins, Microbiology
Stephen McSorley, Microbiology
Irvington Institute of Medical Research
\$90,720 - 4/1/98-3/31/01

A Randomized, Double-Blind Trial of Cholestagel vs Placebo in Patients with Primary Hypercholesterolemia

Donald B. Hunninghake, Pharmacology
Larry W. Kotek, Medicine
Geltex Pharmaceuticals, Inc.
\$104,000 - 1/1/98-10/31/98

A Randomized, Double-Blind, Parallel Group Evaluation Study

Donald B. Hunninghake, Pharmacology
Larry W. Kotek, Medicine
Bayer Corp.
\$80,652 - 10/1/97-12/31/99

Double-Blind, Placebo-Controlled, Dose-Ranging Clinical Evaluation

Maria K. Hordinsky, Dermatology
Glaxo Wellcome
\$97,200 - 11/1/97-12/31/00

Cyplex Phase IIE Platelet Alternative Efficacy Study

J. Jeffrey McCullough, Laboratory Medicine and Pathology
Nigel Key, Medicine
Dale E. Hammerschmidt, Medicine
Cypress Bioscience, Inc.
\$116,065 - 3/24/98-3/23/99

Ascending Doses of Adenovirus Mediated Human FGF-4 Gene Transfer in Patients with Stable Exertional Angina

Robert Wilson, Medicine
Berlex Laboratories Inc.
\$120,000 - 2/1/98-1/31/99

Interferon and Host Response to Pneumococcal Infection

Jeffrey B. Rubins, Medicine
NIH,
\$105,325 - 4/1/98-3/31/99

The Use of the Hypoglycemic Clamp in the Assessment of Pituitary Functions

Elizabeth R. Seaquist, Medicine
Lilly Research Laboratories
\$48,466 - 4/6/98-4/5/99

Study of Recombinant Human Nerve Growth Factor

Gareth Parry, Neurology
Praful Kelkar, Neurology
Genentech, Inc.
\$180,000 - 8/13/97-4/30/99

A Randomized, Double-Blind, Placebo-Controlled Dose-Escalation Trial in Patients with Parkinson's Disease

Paul J. Tuite, Neurology
Robert E. Maxwell, Neurosurgery
Eric S. Nussbaum, Neurosurgery
Amgen
\$93,642 - 12/8/97-9/30/98

The Effect of Osteoprotegerin on Cancer-Induced Bone Destruction

Denis Clohisy, Orthopaedic Surgery
Amgen
\$24,000 - 12/4/97-12/3/98

Therapy-Related Leukemia: Clinical/Biologic Predictors

Stella M. Davies, Pediatrics
John P. Perentesis, Pediatrics
Julie A. Ross, Pediatrics
NIH, NCI
\$243,981 - 5/1/98-2/28/99

An Open Label, Safety, Tolerance, and Pharmacokinetic Study

Blanche M. Chavers, Pediatrics
Clifford Kashtan, Pediatrics
Hoffmann-La Roche Pharmaceuticals
\$145,970 - 9/1/97-2/28/02

A Phase III, Multi-Center, Double-Blind, Randomized Trial of Genotropin for Growth-Hormone-Deficient Patients

David M. Brown, Pediatrics
Pharmacia and Upjohn
\$104,068 - 9/15/97-6/1/01

LAMICTAL in the Treatment of Acute Manic Episode

Barry Rittberg, Psychiatry
David Adson, Psychiatry
Suck Won Kim, Psychiatry
Glaxo Wellcome
\$133,556 - 10/1/97-9/30/98

In Vivo Placement of Device in the Porcine Model

Richard W. Bianco, Surgery
Heartstent, Inc.
\$497,901 - 8/16/97-8/15/99

A Double-Blind Study of Naltrexone in the Treatment of Pathological Gambling Disorder

Suck Won Kim, Psychiatry
Ken Winters, Pediatrics
National Center for Responsible Gaming
\$53,374 - 1/10/98-12/30/98

Lexical Processing on Controls and Patients with Mania and Schizophrenia

Jose V. Pardo, Psychiatry
Minnesota Medical Foundation
\$12,151 - 4/1/98-3/31/99

Toward the Molecular Mechanism of Neonatal Epilepsy

V. Elving Anderson, Genetics and Cell Biology

University of Utah

\$11,809 - 12/1/97-11/30/98

Two Perspectives on Satisfaction: Patients and Pharmacists

Stephen Schondelmeyer, Pharmacy

Jill De Witt-Acosta, Pharmacy

American Pharmaceutical Association

\$34,917 - 2/1/98-5/31/99

Training Material for Nurses to Use Brightfutures

Barbara J. Leonard, Nursing

HRSA, Maternal and Child Health

\$210,233 - 7/1/97-6/30/98

Time-Dependent Simulation of Nonlinear Cosmic-Ray Acceleration

Thomas W. Jones, Astronomy

National Aeronautics and Space Administration

\$44,890 - 4/1/98-2/28/99

In-Situ Atomic Level Growth and Characterization Facility

C.J. Palmstrom, Chemical Engineering and Materials Science

USDoD, Air Force

\$236,465 - 3/1/98-2/28/99

Crystalline-Amorphous Interfaces and Amorphous Fibers in Grain Boundaries

C. B. Carter, Chemical Engineering and Materials Science

U.S. Department of Energy

\$129,729 - 1/1/98-12/31/98

Research Experiences for Undergraduates in Chemistry

Louis H. Pignolet, Chemistry

National Science Foundation

\$57,650 - 6/1/98-5/31/99

Electron Transfer Studies in Ribonucleotide Reductase

Marcia A. Miller, Chemistry

Marian T. Stankovich, Chemistry

NIH, NIGMS

\$30,160 - 4/13/98-4/12/99

Distributed Robotics Using Reconfigurable Robots

N. Papanikolopoulos, Computer Science and Engineering

USDoD, Advanced Research Projects Agency

\$547,156 - 4/2/98-3/31/01

Graph Partitioning for Dynamic, Adaptive, and Multiphase Computations

Vipin Kumar, Computer Science and Engineering

George Karypis, Computer Science and Engineering

Cray Research Foundation

\$55,000 - 1/1/98-12/31/98

Low-Power Architectures for Video Compression

Keshab K. Parhi, Electrical and Computer Engineering

USDoD, Army

\$108,350 - 4/1/98-3/31/01

Visual Information in a Feedback Loop: A Control/Computer Vision Synthesis

Allen Tannenbaum, Electrical and Computer Engineering

USDoD, Army

\$40,000 - 3/16/98-11/15/98

Chemical and Physical Consequences of Magma Injection in Submarine Hydrothermal Systems: Mathematical Modeling

Mark Person, Geology and Geophysics

Michael E. Berndt, Geology and Geophysics

National Science Foundation

\$191,109 - 4/1/98-3/31/00

Rheology of Diabase: Implications for Tectonics

David Kohlstedt, Geology and Geophysics

National Aeronautics and Space Administration

\$71,121 - 4/1/98-3/31/99

Equivalences in Finite Group Block Theory

Morton E. Harris, Mathematics

National Security Agency

\$18,884 - 2/9/98-2/8/99

Effects of Air Velocity on Grease Deposition in Exhaust Ducts

Thomas Kuehn, Mechanical Engineering

David Y. Pui, Mechanical Engineering

James W. Ramsey, Mechanical Engineering

American Society of Heating, Refrigerating, and Air Conditioning Engineers

\$93,425 - 4/1/98-3/31/99

Applied Research on Remotely-Queried Embedded Microsensors

Susan C. Mantell, Mechanical Engineering

Dennis L. Polla, Electrical and Computer Engineering

Ramesh Harjani, Electrical and Computer Engineering

MTS Systems Corp.

\$66,972 - 10/28/97-8/30/99

Support for the Soudan Mine Crew

Earl Peterson, Physics and Astronomy

Fermi National Accelerator Laboratory

\$50,000 - 4/1/98-9/30/98

Anti-Nicotinic Receptor T Cells in Myasthenia Gravis

Bianca M. Conti-Fine, Biochemistry (CBS)

Muscular Dystrophy Association

\$49,946 - 4/1/98-3/31/99

Impacts of Conservation Reserve Program (CRP) on Wildlife Monitored by DNR August Roadside Counts

Mark Lindberg, Geography

Jane Mueller, Geography

St. of Minn., Department of Natural Resources

\$40,096 - 1/1/98-12/31/99

Oldest-Old Mortality and Disability in Danish Twins

Matt McGue, Psychology

Duke University

\$10,384 - 3/15/98-12/31/98

Ebonic/African-American Language and Literacy Symposium

Elaine Richardson, General College

Minnesota Humanities Commission

\$3,000 - 12/12/97-3/16/98

Botanica: Contemporary Art and the World of Plants

Peter Spooner, Tweed Museum of Art, Duluth

Lannan Foundation

\$4,800 - 3/9/98-10/1/98

Training for Food Management and Research Support

Benjamin Senauer, Applied Economics

International Food Policy Research Institute

\$215,885 - 10/15/97-9/30/99

Extension and Applications of Wild Rice Mapping

Ronald L. Phillips, Agronomy and Plant Genetics

Raymond Porter, North-Central Agricultural Experiment Station

Minnesota Cultivated Wild Rice Council

\$18,038 - 3/9/98-3/8/99

Importance of Malathion

B. Subramanyam, Entomology

Ian Macrae, Entomology

Minnesota Cultivated Wild Rice Council

\$6,000 - 3/9/98-10/1/98

Increasing Casein Hydrolysis in Whey-Protein-Fortified Cheese

Eric D. Bastian, Food Science and Nutrition (COAFES)
Kraft, Inc.
\$56,683 - 2/1/98-1/31/99

Elucidate the Role of Putative Biocontrol Fungi in Preventing Overland Transmission in the Oak Wilt Virus

Neil A. Anderson, Horticultural Science
Jennifer Juzwick, Plant Pathology
U.S. Department of Agriculture
\$13,000 - 3/31/98-6/30/99

Validation of Aster Modis with Surface-Flux Applications

Kenneth J. Davis, Soil, Water, and Climate
University of Wisconsin
\$54,957 - 1/1/98-9/30/98

Sugarbeet Disease Control and Precision Nitrogen Management

Carol E. Windels, Plant Pathology
Larry J. Smith, Northwest Agricultural Experiment Station, Crookston
Sugarbeet Research and Educational Board of Minnesota and North Dakota
\$135,708 - 4/1/98-3/31/99

Determining the Sources and Chemical Composition of the Lamprey Larval Pheromone

Peter Sorensen, Fisheries and Wildlife
Great Lakes Fishery Commission
\$80,907 - 4/1/98-3/31/99

Larval Fish Populations in Tributaries of the Red River

Bruce Vondracek, Fisheries and Wildlife
St. of Minn., Department of Natural Resources
\$51,850 - 1/1/98-6/30/00

Sustainable Futures for the Upper Mississippi River

Anne R. Kapuscinski, Fisheries and Wildlife
Northwest Area Foundation
\$34,010 - 4/1/98-9/30/98

Canada Goose Population Management and Ecology

James A. Cooper, Fisheries and Wildlife
City of New Hope
\$8,000 - 3/15/98-3/15/02

Canada Goose Population Management and Ecology

James A. Cooper, Fisheries and Wildlife
City of Fridley
\$4,000 - 3/15/98-3/15/02

Forest Tree Improvement

Robert Stine, Forest Resources
St. of Minn., Department of Natural Resources
\$30,000 - 10/17/97-6/30/99

Private Forest Management Survey

Melvin J. Baughman, Forest Resources
St. of Minn., Department of Natural Resources
\$6,245 - 12/12/97-9/1/98

Linking Freeway Bus Service to Freeway Routes: The 35W Challenge

Mary C. Vogel, Architecture
Lance Neckar, Landscape Architecture
St. of Minn., Department of Transportation
\$45,000 - 4/6/98-1/31/99

North Metro I-35W Corridor Livable Community Study

William Morrish, Design Center for American Urban Landscape
Carol Swenson, Design Center for American Urban Landscape
North Metro I-35W Coalition
\$60,000 - 12/15/97-4/15/98

Comprehensive Model of Early Development of Conscience

Megan Gunnar, Child Development
National Science Foundation
\$30,614 - 4/1/98-3/31/00

Integration and Disintegration in the Former Soviet Bloc

Josef Mestenhauer, Educational Policy and Administration
U.S. Department of Education
\$52,000 - 3/31/98-8/31/98

National Transition Network

David R. Johnson, Educational Psychology
University of Illinois, Champaign-Urbana
\$551,523 - 10/1/97-9/30/98

St. Paul Schools, Highwood Hills Elementary School: "A Computer for Every Student" Program

Steven L. Robinson, Educational Psychology
Saint Paul Public Schools
\$47,526 - 9/1/97-6/30/98

Model for Policy Analysis of Transportation Statistics

Lee Munnich, Humphrey Institute
U.S. Department of Transportation
\$49,580 - 3/2/98-9/30/98

Conceptual Organizing/Public Work Project

Harry C. Boyte, Humphrey Institute
Kettering Family Foundation
\$29,969 - 8/4/97-8/3/98

Adult Pneumococcal Immunization: Knowledge, Attitudes, and Behavior

Rossana Armson, Urban and Regional Affairs
St. of Minn., Department of Health
\$36,950 - 3/2/98-5/31/98

CTS/MnDOT Cooperative Program for Transportation Research, Education, and Information/Outreach

Robert Johns, Civil Engineering
Laurie McGinnis, Center for Transportation Studies
St. of Minn., Department of Transportation
\$800,000 - 7/1/97-6/30/98

Passenger and Freight Travel Demand Patterns

Gerard J. McCullough, Center for Transportation Studies
Gary Barnes, Center for Transportation Studies
St. of Minn., Department of Transportation
\$54,000 - 2/11/98-3/31/99

Environmental Factors that Influence Amphibian Community

Lucinda Johnson, Natural Resources Research Institute, Duluth
Patrick Schoff, Natural Resources Research Institute, Duluth
University of Illinois, Champaign-Urbana
\$163,511 - 10/1/97-9/30/00

Child Welfare Training

Esther F. Wattenberg, Social Work
Jean K. Quam, Social Work
St. of Minn., Department of Human Services
\$221,066 - 10/1/97-9/30/98

Maria Suarez Toro: Speaker for Latin American Awareness and Women's History Events

J. M. Kramer, Medicine, Duluth
Susana P. Woodward, Student Equity, Duluth
Duluth-Superior Area Community Foundation
\$1,500 - 4/1/98-4/30/98

Baeumler-Kaplan Holocaust Memorial Fund

Harold L. Hellenbrand, Liberal Arts, Duluth
Duluth-Superior Area Community Foundation
\$1,000 - 2/15/98-4/27/98

Is the U.S. a Role Model?

Dimitra Giannuli, Elementary and Secondary Education, Morris
Minnesota Humanities Commission
\$1,000 - 3/18/98-5/31/98

Fax number 612/624-4843
 ORTTA's Web site <http://www.ortta.umn.edu>
 EGMS Help Line 612/625-1888

	<u>name</u>	<u>number</u>	<u>e-mail</u>
Interim Associate Vice President, ORTTA	Ed Wink	624-1648	ed@ortta.umn.edu
Interim assistant vice president	Winifred A. Schumi	624-5750	wschumi@ortta.umn.edu
Executive secretary	Brigitte Welter	626-7437	brigitte@ortta.umn.edu
Editor, <i>Research Review</i>	Phil Norcross	625-2354	phil@ortta.umn.edu
Sponsored Projects Administration, information 624-5599			spa@ortta.umn.edu
Executive assistant	Kim Makowske	624-9004	kim@ortta.umn.edu
Application materials	Tove Jespersen	624-0061	tove@ortta.umn.edu
Assistant Director (NIH, USDE, CDC, FDA, HRSA, DHHS)	Mary Lou Weiss	624-5856	marylou@ortta.umn.edu
Foundations, DHHS	Judy Krzyzek	624-2546	krzyzek@ortta.umn.edu
Foundations, DHHS	Leslie Flaherty	624-0895	leslie-f@ortta.umn.edu
USDA, DOJ, HUD (contracts only); USIA, AID, USDE, DHHS	Kevin McKoskey	624-1521	kevin@ortta.umn.edu
USDA, DOJ, HUD (grants only); DHHS	Karen Sachi	626-0270	karen@ortta.umn.edu
NASA, DOD (AF, Army); misc federal (contracts only); DHHS	TBA	624-0288	ginny@ortta.umn.edu
DOD (Navy); misc federal (grants only); DHHS	Suzanne Marshall	625-1359	sue@ortta.umn.edu
USDA (contracts only); USDE, NIH, HRSA, FDA, CDC, DHHS	Lorrie Awoyinka	625-3415	lorrie@ortta.umn.edu
USDA (grants only); DHHS	Doug Johnson	624-4121	doug@ortta.umn.edu
Assistant Director (MN Technology, MN Health, NSF, VA)	Todd Morrison	624-5066	todd@ortta.umn.edu
NSF	Launa Shun	624-2521	launa@ortta.umn.edu
NSF	Sandy Kenyon	624-9567	sandy@ortta.umn.edu
Ag. associations, other private	Kate Tennesen	626-7718	kate@ortta.umn.edu
Voluntary health	Liz Li	624-0810	liz-l@ortta.umn.edu
St of MN, governments	Amy Levine	626-7441	amy-l@ortta.umn.edu
St of MN, governments	Tracy McClun	626-8265	tracy@ortta.umn.edu
Business and industry, Medical School	Judy Volinkaty	624-3317	judy-v@ortta.umn.edu
Business and industry, Medical School	Lynn VanOverbeke	624-0035	lynn@ortta.umn.edu
Business and industry, health sciences	Gary Gillet	624-5571	gary@ortta.umn.edu
Business and industry, health sciences	Chris Coyne	626-8267	chris-c@ortta.umn.edu
Patents and Technology Marketing, information 624-0550, fax 624-6554			ptm@ortta.umn.edu
Director, technology licensing (IT, CBS, COAFES, CNR, CHE)	Tony Strauss	624-0869	tony-s@ortta.umn.edu
Technology licensing	Jeff Carpenter	624-6426	jeff@ortta.umn.edu
Software licensing	Jim Hildebrand	624-9568	jim-h@ortta.umn.edu
Technology licensing	Beth Trend	626-9293	beth@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	Brian Kelly	624-8205	brian@ortta.umn.edu
Technology transfer coordinator (Sota Tec Fund)	Erhard Bieber	625-8826	erhard@ortta.umn.edu
Indirect Cost, Effort Certification			
Indirect cost and other rate development, and effort reporting	TBA	626-9741	
Effort help line		625-7824	
Information Services			
Administrator	Mary Cybyske	624-6085	mcybyske@ortta.umn.edu
Duluth, Office of Research & Technology Transfer			
Sr. grant and contract administrator	Jim Loukes	218/726-7583	jloukes@ub.d.umn.edu
Morris, Grants Development, http://www.mrs.umn.edu/services/grants			
Director	Tom Mahoney	320/589-6462	mahoneyt@caa.mrs.umn.edu
related numbers			
Sponsored Financial Reporting, fax 626-0321			
Manager	Joan Donaldson	624-6026	joan@ortta.umn.edu
Supervisor, nonfederal, foundations, St. of MN	Dan Hemauer	624-5007	dan-h@ortta.umn.edu
Supervisor, industry, NSF, subcontracts	Kerry Marsolek	624-8053	kerry@ortta.umn.edu
Supervisor, NIH, USDE	Pat Healy	624-7033	pat@ortta.umn.edu
Supervisor, other federal	Reneé Frey	624-7850	renee@ortta.umn.edu
Research Subjects' Protection Programs, fax 626-6061			
Director	Moira Keane	626-5654	irb@umn.edu iacuc@umn.edu

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