TRANSITiONS

Newsletter 1998

University of Minnesota Duluth

Department of Chemistry

Meet our New Faculty

John Evans (*Ph.D., 1975, University of Delaware*), an internationally known analytical chemist from the University of Minnesota (Twin Cities), brought his research in thin films and plasma chemistry to Duluth. His interests in quality undergraduate education and innovative undergraduate teaching made a solid match with our department goals. John's wife, Marilyn, assumed a pastorship of a Methodist church in a neighboring community.

Cecilia Giulivi (*Ph.D., 1988, University of Buenos Aires*) joined our faculty after developing an impressive record as an assistant professor at the Department of Molecular Pharmacology and Toxicology, USC. With active research grants in place and new laboratory facilities in the building, she anticipates a rapid start to her UMD program of research on the biochemistry of nitric oxide in biological systems. She and her family (husband José and two daughters, Lucia and Clara) have settled into the area and have adjusted to their first snow.

continued on page 3

New Faculty Join Department

left to right
front row: *John Evans, Cecilia Giulivi, Peter Kebbekus*
back row: *James McManus, Phillip Persichini*

Greetings From the Department H

Bilin P. Tsai

Dear Friends and Graduates of UMD Chemistry,

The past year has been a very exciting one for us and this newsletter gives us an opportunity to share our news with you. Most notable are the successful completion of a major renovation of our research facilities (p.10) and the hiring of several new faculty members who bring exceptional training and accomplishment to our program (p. 1, 3). In fact, with all the new faces in the department, we decided to include a new faculty photo (p.5).

The 1998 Summer Undergraduate Research Program (p.7) included 29 participants, and is an excellent model of bringing together private funds, faculty research grant monies and alumni gifts to provide outstanding research opportunities for undergraduate students.

As we move to adopt the semester system in fall 1999, we have made significant improvements in our instructional laboratories (p.10) to insure that our students receive experimental training that is modern, comprehensive and hands-on. To support our experimental program, we are working on a proposal for a new chemistry and biology science building. Our current instrument needs are described on page 11, with a request for donation of modern laboratory equipment, should your company be able to help us.

Our B.S. chemistry and biochemistry/molecular biology graduating class is one of our most outstanding as you will see from their post-baccalaureate plans (p.12). Speaking of graduates, it was a real pleasure for me to meet some of our UMD chemistry graduates from the Duluth Central High School Class of 1948. I very much enjoyed giving them a tour of the building and appreciated their interest in our program.

All of you play an essential role in our efforts to provide instructional and research programs of the highest quality, and to contribute to the professional development and success of our students. We are very grateful for your participation and invite you to continue your support with monetary gifts, news of jobs, equipment transfers, information about opportunities, etc.

Please keep in touch, let us know what you are doing and come visit us.

Best wishes

Bilin P. Tsai

Bilin P. Tsai
Professor and Department Head

contents of the issue

Meet our New Faculty

(continued from page 1)

Peter Kebbekus (Ph.D., 1997, Johns Hopkins University) will be providing teaching support to the Biochemistry-Molecular Biology program while looking to develop his research interests in RNA structure and RNA-protein interactions. A more personal interest is the biochemistry of brewing and wine making. Peter and his wife, Annette Boman, assistant professor in the School of Medicine Department of Biochemistry and Molecular Biology, welcomed their first child, Joseph, in December.

Jim McManus (Ph.D., 1992, Oregon State University) is a chemical oceanographer in the Large Lakes Observatory, who has his academic home in chemistry. Jim is moving a major research program to UMD from Oregon State University, where he was an assistant professor. His interests in biogeochemical cycling processes, sediment geochemistry and paleoceanography will provide significant support to the departmental initiative to develop an ACS certified environmental chemistry program.

Phillip ("P.J.") Persichini (Ph.D., 1998, University of Wyoming) is the recipient of a Camille and Henry Dreyfus Fellowship to gain experience at an institution recognized for its emphasis on quality teaching and undergraduate research. That's us! He will be working with Viktor Zhdankin to guide undergraduate research students in the understanding of organoboron chemistry and to teach selected undergraduate classes. When not in the building, you will find P.J. with his wife Nicole (and daughter Michaela), playing basketball or remodeling a newly purchased home in West Duluth.

Major Recognitions & Awards

Les Drewes, professor of biochemistry and molecular biology (UMD School of Medicine), received a special award from NIH for research in neuroscience in honor of the late Senator Jacob Javits (New York). Awardees were chosen based on a distinguished record of substantial contributions in neurological science and the expectation of high productivity over the life of the award (seven years).

Pavel Krasutsky, NRRI, adjunct professor of chemistry, was presented with the highest scientific award given in the Ukraine (May 1998).

Don Poe received a significant gift of a supercritical fluid chromatograph (SFC) from Bristol-Myers Squibb to support his research effort to elaborate the theoretical basis for this relatively new technology.

Bilin Tsai was elected to the Board of Directors of the American Association of Higher Education (AAHE).

Viktor Zhdankin was chosen as the plenary speaker for the Mendelev Congress in General and Applied Chemistry (St. Petersburg, Russia).

Congratulations!

International Activities

The end of September saw **Ron Caple** off to Hanoi, Vietnam to participate in an Asian conference on natural products. Ron was accompanied by his student, Minh-Chau Le Nguyen, who presented a paper at the conference. With Ron's help a collaborative effort with *Dr. Luu Duc Huy* of the Institute of Chemistry in Hanoi now has funding from the International Foundation for Science. The Swedish representatives of this foundation encouraged Ron to apply for funding for his cooperative project with chemists at the University of Pinar del Rio, Cuba.

Bob Carlson completed his service as U.S. Chair of the Lake Superior Binational Forum, the International Joint Commissions (ITC) Advisory Group for the demonstration "zero discharge" program for the Great Lakes.

Larry Thompson spent November 1997 at the Federal University of Pernambuco in Recife, Brazil in continuation of his 30 year involvement with Brazilian chemistry. His stay included service on examining committees, lectures and consultations.

Several international scientists worked in the department during the past year. They included:

William Smit (professor emeritus, Institute of Organic Chemistry, Moscow, Russia) visited with **Ron Caple** as part of their ongoing Civilian Research and Development Fund (CRDF) grant.

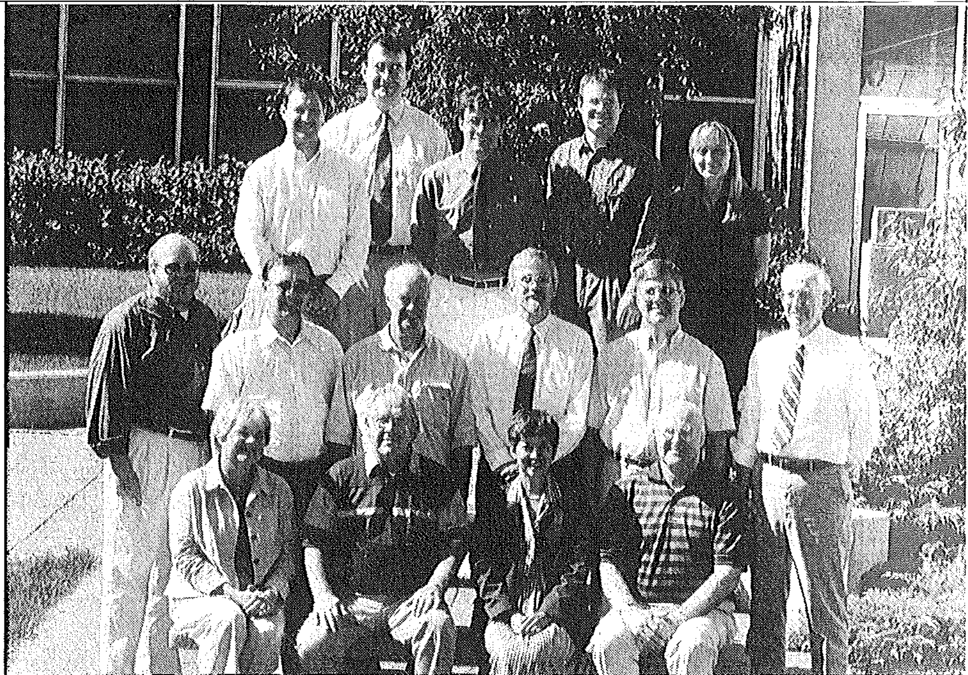
Tianlin Liu (Nankai University, Tianjin, PRC), organic synthesis with **Bob Carlson.**

Eugene Tokhtuev, Anatoly Skirda, Viktor Slobodyan (Institute of Analytical Instrumentation, Kiev, Ukraine), sensor design and development with **Bob Carlson.**

Igor Kolomitsyn and Oksana Kolomitsyna, Suad Nadi, Vitaliy Nesterenko (Kiev Polytechnic Institute, Ukraine). Chemical extractives program with **Pavel Krasutsky** and **Bob Carlson.**

Eugenijus Butkus (University of Vilnius, Lithuania), ACS International Visitors Program with **Bob Carlson.**

left to right
row 1: *Patricia Splan, Donald Harriss, Bilin Tsai, Larry Thompson*
row 2: *John Evans, Viktor Zhdankin, Ron Caple, Paul Siders, Donald Poe, Robert Carlson*
row 3: *Phillip Persichini, Paul Kiprof, James McManus, Peter Kebbekus, Cecilia Giulivi*



UMD Department of Chemistry Faculty

Faculty and Staff

Bilin Tsai completed a term as reviewer for the American Association of University Women (AAUW) International Fellowship Program.

Scott Anderson was promoted to senior laboratory services coordinator.

Vince Magnuson continued his service as UMD vice chancellor for academic administration.

Don Harriss is serving as chief negotiator for the UMD faculty collective bargaining unit.

Bob Carlson's contributions to a 10-year effort to develop a $30 million environmental education center by the Duluth harbor were rewarded with final approvals by the city and state.

Ron Caple, with two Russian colleagues (W. A. Smit and A. F. Bochkov) saw the publication of their book "Organic Synthesis - the Science Behind the Art" by the Royal Society of Chemistry.

Ken Wallace was the editor of a book, "Molecular Biology of the Toxic Response," and also was a contributing author. He was also elected to the board of directors of the American Board of Toxicology.

Viktor Zhdankin was the chair of two sessions at National ACS Meetings (Dallas - "New Reaction Methodology;" Las Vegas - "Aromatic Compounds/Heterocycles").

Bilin Tsai, Pat Splan and Paul Kiprof attended a New Traditions workshop in the Department of Chemistry at the University of Wisconsin - Madison. This workshop was sponsored by NSF and is part of a national effort to improve science education. Educators from throughout the Midwest met in Madison to discuss ways of bringing more active learning techniques into science courses and engaging the students in their study of chemistry. Our efforts to translate these classroom strategies into practice and, more importantly, to enhance student learning are complementary to our long standing goal of strengthening and modernizing the laboratory curriculum. As we move to semesters, we will continue to direct resources to both of these important educational activities.

1998 Summer Undergraduate Research Program

Name	Advisor	Project Title
Samantha Adkins	L.R. Drewes	Expression of Monocarboxylate Transporters in Cultured Rat Brain Endothelial Cells
Fawn Atchison	L.C. Thompson	Spectroscopic and Structural Characterization of the Seven-Coordinate Adduct of Tris(Dibenzoyl-methanato) Europium (III) with Triphenylphosphine Oxide
Craig Berry	V.V. Zhdankin	Preparation and Chemistry of Benziodazole Oxide
Jessica Bruno	V.V. Zhdankin	Synthesis of New Alkyiodonium Derivatives Stabilized by Electron-Withdrawing Groups
Dmitriy Chekmarev	R. Caple	Novel ArS-mediated Ad_E-coupling Followed by Cyclization as a Method for the Preparation of Polyfunctional Compounds
Amy Christopherson	K.B. Wallace	The Differential Regulation of Gene Expression by Peroxisome Proliferators
Kathryn Claussen	R.M. Carlson	Generation of Cyclopropyl Carbanions
Jonathon Delf	R.M. Carlson M.R. Karim	Study of the Mechanism of Action of Betulin in Protecting HEp2 Cells Against Herpes Simplex Virus Type 2 (HSV-2) Infection
Paul Demro	J.R. Prohaska	Nutritional Copper Status and the Nervous System
Aaron Hall	P.M. Anderson	Sequence of the Promoter Region of the Gene for Carbamoyl Phosphate Synthetase I in *Xenopus Laevis*
Karissa Jannett	V.V. Zhdankin	Preparation and Chemistry of New Benziodazole Oxides
Eddie Kalombo	P. Kiprof	Synthetic Approach to Arene Binding Potential
Mitchell Kimmes	R.M. Carlson	Generation of Cyclopropyl Carbanions
Kyle Kingsley	P.M. Anderson	Expression of Carbamoyl-Phosphate Synthetase in the Gulf Toadfish
Kimberly Kraus	K.B. Lodge	Elucidation of Phenomena in the Measurements of 1-Octanol Water Partition Coefficients (P)
Jessica Lager	R. Caple M.R. Karim	In Vitro Effect of Vietnamese Plants Against Herpes Simplex Type 2 Virus (HSV-2) in Human Epithelial Cells (HEp2)
Marc McSherry	V.V. Zhdankin	Preparation of New Benziodoxole Oxides
Jaime Melde	D.P. Poe	The Effect of Column Diameter on Efficiency in Packed Column Supercritical Fluid Chromatography
Jamie Mueller	P. Kiprof	Theoretical and Synthetic Studies of High-Valent Transition Metal Lewis Acids and Lewis Base Adducts
Minh C. Nguyen	R. Caple	Arenesulfenyl Chloride Mediated Coupling of t-Butyl Vinyl Ether with Tin and Silicon Containing Carbon Nucleophiles
Jessica Niemi	K.B. Wallace	Effects of Mitochondrial Toxins on Biogenesis of Mitochondria
John Podobinski	P.D. Siders	Semi-empirical Potential Energy Functions for Calcite
Catherine Renish	P. Kiprof	Synthetic and Theoretical Studies of High-Valent Titanium Arene Complexes
Cary Scheiderer	P.M. Anderson	Measuring Levels of Carbamoyl Phosphate Synthetase III in *Oreochromis alcalicus grahami*
Troy Sikkink	B.L. Clarke	Atrial Natriuretic Peptide Clearance Receptors are Found in Both Adrenal Pheochromocytoma (PC-12) Cells and Cardiac Myocytes
Jason Smart	V.V. Zhdankin	Preparation and Chemistry of Benziodazoles and Benziodazole Oxides
Sara Steuart	J.R. Prohaska	Copper-Dependent Rat Peptidylglycine α-Amidating Monooxygenase
Darren Wakefield	R. Caple	Arenesulfenyl Chloride Mediated Coupling of t-Butyl Vinyl Ether with Tin and Silicon Containing Carbon Nucleophiles
Eric West	L.R. Drewes	The Effect of a Ketogenic Diet on Rat Plasma Metabolites

left to right
row 1: *Sara Steuart, Jessica Niemi, Cary Scheiderer, Jamie Mueller, Jessica Lager, Aaron Hall*
row 2: *Kathryn Claussen, Jessica Bruno, Jaime Melde, Kimberly Kraus, John Podobinski, Troy Sikkink*
row 3: *Catherine Renish, Karissa Jannett, Jason Smart, Mitch Kimmes, Jonathan Delf, Laura Freiburger, Amy Christopherson*
row 4: *Marc McSherry, Craig Berry, Minh-Chau Nguyen, Andrew Vindel, Darren Wakefield, Dmitriy Chekmarev*
not in picture: *Samantha Adkins, Fawn Atchison, Eddie Kalombo, Kyle Kingsley, Eric West, Paul Demro*

Summer Undergraduate Research Program Participants

"This summer was a great experience for all of us!"

Ron Caple, Director SURP

Twenty-nine students participated in the UMD Department of Chemistry 1998 Summer Undergraduate Research Program (SURP). The Swenson Family Foundation, research grants, Cell Resin Technologies and departmental resources provided student support and money for supplies, chemicals and equipment.

Each student worked on a research project for ten weeks. Faculty in the Department of Chemistry and the Department of Biochemistry and Molecular Biology supervised the projects. In addition to working on their research projects, students attended an orientation and safety training program, prepared and displayed research posters for the Summer Undergraduate Research Program Poster Fair, and wrote final reports at the end of the program. They played softball and soccer, picnicked and met informally on other occasions.

1997/98 Department of Chemistry Awards

Swenson Family Foundation Scholarships for Academic Excellence

Megan Boyum	Anoka, MN
Alan Dewey	Plainview, MN
Emily Eschbach	Duluth, MN
Meghan Godding	Wadena, MN
Philip Hommerding	St. Cloud, MN
Joe Browning	Baxter, MN
Jaclyn Stodola	White Bear Lake, MN
Crystal Weech	Park Rapids, MN

CRC Freshman Chemistry for Excellence in General Chemistry

Matthew Wright	Elgin, MN
Alice Rosenwald	Elk River, MN
Jaclyn Stodola	White Bear Lake, MN
Sarah Laszcwski	White Bear Lake, MN

Achievement in Organic Chemistry (ACS) Award

John Redmond	Coon Rapids, MN

Undergraduate Analytical Chemistry Award

Jaime Melde	Duluth, MN

Gary E. Glass Excellence in Chemistry Awards

Jonathan Schroden (S 97)	South St. Paul, MN
Aaron Hall (F 97)	Hutchinson, MN
Shannon Fix (W 98)	Stanchfield, MN

James H. Maguire Scholarships

Kremena Tzoneva	Wichita, KS
Aaron Hall	Hutchinson, MN
Erin Brandl	Coon Rapids, MN

HyperCube Scholar Award

Irvin Hosford	Apple Valley, MN

Lake Superior Section of ACS Outstanding Senior

Fawn Atchison	Duluth, MN

Biochemistry and Molecular Biology Outstanding Graduating Senior

Timothy Lindley	Carlos, MN

Casmir Ilenda Award for Outstanding Undergraduate Research

Joshua Crum	Stillwater, MN

F. B. Moore Academic and Leadership Award

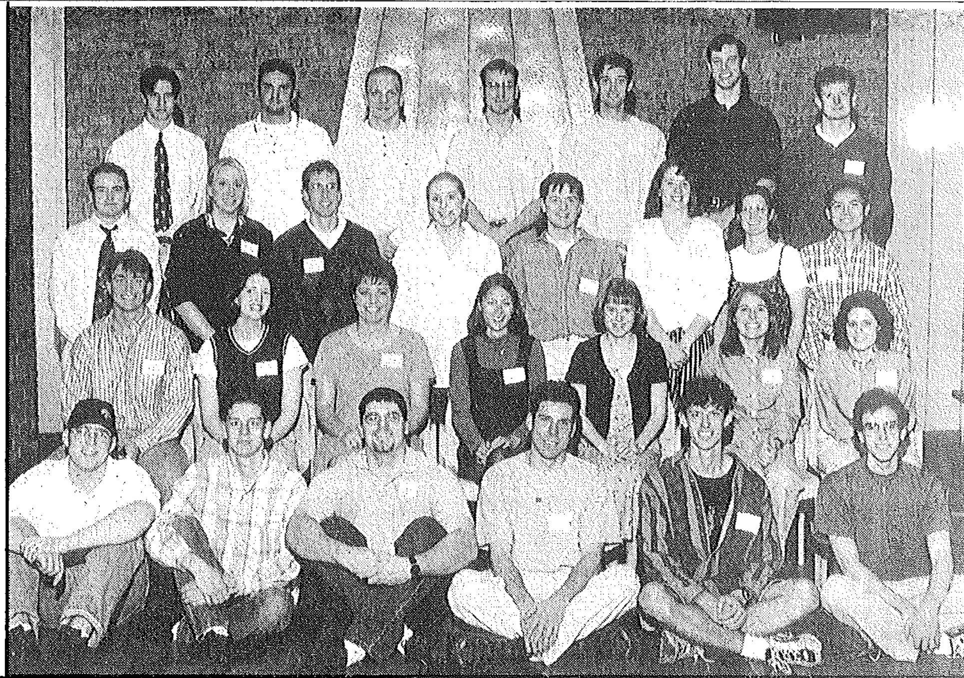
Christie Haupert	Duluth, MN
Jonathan Schroden	St. Cloud, MN

Departmental Honors

Fawn Atchison	Duluth, MN
Joshua Crum	Stillwater, MN
Vanessa Dufault	Argyle, MN
Mark Erickson	St. Cloud, MN
Laura Freiburger	Waukesha, WI
Christie Haupert	Duluth, MN
Robert Huebert	St. Cloud, Mn
Timothy Lindley	Carlos, MN
Minh Nguyen	Roseville, MN
Jonathan Schroden	St. Cloud, MN
Jonathan Thompson	Superior, WI

Outstanding Graduate Teaching Assistant

Jason Agnich	Ely, MN



left to right
row 1: *Tim Lindley, Michael Burand, Irvin Hosford, John Rinn, Mitchell Kimmes, Aaron Hall*
row 2: *Troy Sikkink, Samantha Adkins, Amy Christopherson, Jessica Bruno, Jaime Melde, Laura Freiburger, Vanessa Dufault*
row 3: *Craig Berry, Erin Brandl, Mark Erickson, Lindsay Miller, Jon Thompson, Julie Klejeski, Christie Haupert, Minh Nguyen*
row 4: *Terry Steele, John Redmond, Mark Steffen, Winston Willis, Matt Lehnert, Jonathan Delf, Josh Crum*

Honors Program Students

"Wow! What an outstanding group of students..."

Bob Carlson, director Honors Program

The Honors Program of the UMD Department of Chemistry is designed to provide outstanding Chemistry majors and Biochemistry/Molecular Biology majors an opportunity to develop the ability to function as independent and competent research workers, to encourage them in their study of and interest in Chemistry or Biochemistry/Molecular Biology, and to aid in their transition from student to scientist.

There has been renewed interest in our Honors Program over the past several years, such that there are now 40-45 sophomores, juniors and seniors who participate. Although the formal minimum grade point average is 3.25, the cumulative "group average" has hovered around 3.8. The expectation is for each student to engage in about a year and one-half of meaningful research with a faculty adviser and present the results at a formal seminar setting. For example, members of the Honors Program have won the Winchell Award for the top presentation at the Minnesota Academy of Sciences Undergraduate Symposium for each of the past three years.

Renovation of Research Facilities Complete

A year ago, I reported to you in *Transitions* that we initiated a $1.8 million renovation of our research facilities and that "we will realize the benefits of these improvements by fall 1998." So here we are, fifty years after the construction of the Chemistry (formerly Science) Building, and I would like to describe what has gone on in the last year. As you recall, the National Science Foundation provided $1.13 million and the University of Minnesota provided the balance. We have lived through relocation of research labs, stockroom and chemical preparation lab as well as dust, noise, power and water outages, odors and all of those unexpected happenings which renovation projects bring.

Happily, we are realizing benefits that far outweigh the inconveniences. We added fume hoods to several labs to accommodate more research students, redesigned bench areas for greater efficiency and safety, created a new advanced inorganic laboratory and replaced all the benches in the p-chem and instrumental lab. We also incorporated appropriate lab areas for our growing inventory of instruments and computers, renovated the stockroom and chemical preparation lab, replaced all of the deteriorating external windows, met current building codes and added air conditioning. This renovation represents a major improvement in the Chemistry Building and directly translates into program quality. Finally, I want to thank all of the department members for outstanding cooperation and flexibility and the construction/architectural staff for their excellent work.

-Bilin Tsai

New Experiments in Instructional Laboratories

As a chemistry program, we have a clear obligation to provide to our students a laboratory curriculum which is modern, hands-on, comprehensive and dynamic. We have worked hard to pursue this goal at all levels of the program. Last fall, several computer-interfaced experiments were incorporated into the general chemistry laboratory. We purchased ten computers/printers and Vernier interfaces which allow students to collect data on-line and analyze their results during, or immediately after, data collection. These systems have been very successful and have facilitated more discussion and interaction between students, increased decision-making by students based on their data, and resulted in better experimental analyses. Based on the success of these new labs, the computer-interfaced systems have been used in some of the physical chemistry experiments.

In addition to improving the freshman labs, we have directed resources to modernizing our upper division labs. We added more hands-on NMR work, and new GC-MS experiments to the organic chemistry lab. The electronics lab course was revised significantly and the experimental advanced inorganic chemistry curriculum has grown into an entire course. We are committed to continuous laboratory improvement and will seek resources to realize this goal. *(see article on the next page)*

Departmental Equipment and Instrument Needs

One of the ways in which you and your employer can provide extremely valuable assistance to the chemistry department is the donation of equipment. Our growing program faces a shortage of modern equipment. This has been compounded by the addition of young faculty whose needs for other types of research equipment are substantial.

On several occasions in the past we have made contacts which have led to extremely helpful equipment donations: A research-level GCMS from Aspen Corporation (in 1996) is currently in use; Twin Ports Testing donated half the cost of a computerized FTIR (in 1988) which yielded several years of useful life in the upper division laboratory; Mobil Oil Corporation donated eight high-performance data acquisition systems (LabSystems Chromatography Servers) in 1996; Bristol-Myers Squibb (1998) donated a Hewlett-Packard Supercritical Fluid Chromatograph, model G1205A for use in analytical research.

With growing enrollments and rapidly changing instrumentation we do have some serious shortages in certain areas. If your company is in the process of replacing equipment, or is shifting experimental emphasis and will be freeing up operational equipment, please consider requesting that a donation to UMD chemistry be a priority. The equipment must be in reasonable operating condition, e.g., be of recent vintage; any computer equipment should have current operating software.

In particular, we are currently looking for:

- A single crystal X-ray diffractometer on the level of an Enraf Nonius or Siemens P21 or newer.
- A differential scanning calorimeter such as the Perkin-Elmer DSC-6 or similar manufactured within the last 10 years.
- Preparative HPLC instrumentation at the research level.
- For chromatography research and instruction at the upper division level - at least two HPLC systems such as the Hewlett-Packard 1100 series with gradient capability and diode array detectors. Plus, two to four fully functional general purpose gas chromatographs, such as the Hewlett-Packard 5890 series with FID or other universal detectors for use in the undergraduate organic and analytical laboratories.

Our biochemistry/molecular biology instructional and research labs are very recently developed and have a variety of equipment needs.

- Tip sonicator or cell disruptor similar to Microson XL-200
- UV-Vis spectrophotometer (type = Shimadzu or Hitachi-Perkin Elmer model 356) (dual wave length and double-beam)
- Gel dryer and pump (type = Biorad unit)
- Table top ultracentrifuge (type = Optima)
- Rotor for floor model ultracentrifuge, preparative (rotor model Ti60)
- HPLC (type = Shimadzu or Waters) (Millenium)
- FPLC (type = Pharmacia unit)
- Incubators for cell culture with digital control for gases and temp
- Inverted microscope for cell culture dishes (type = Nikon)
- Confocal Microscopy apparatus

The above is not a complete list but does provide you with some indication of the type and nature of our needs. We are always grateful to receive gifts of equipment which are directly related to our mission and needs.

If you believe that an opportunity may exist for you and your company to assist us with an equipment donation, please contact our department head, Bilin Tsai at (218)726-7220 or email *btsai@d.umn.edu.*

1998 Graduating Seniors

Name	Current Plans
Fawn Atchison	MD/PhD Program, Duke University
Milan Bajmoczi	MD/PhD Program, Harvard Medical School
Aaron Boeckermann	unknown
Josh Crum	Medical School, University of Minnesota
Dan Drontle	Medicinal Chemistry Graduate Program, University of Minnesota
Vanessa Dufault	Oncology Research, Mayo Clinic
Mark Erickson	Applying to medical and osteopatic schools
Laura Freiburger	Nutrition Graduate Program, University of Minnesota
Christie Haupert	Chemical Oceanography Graduate Program, Massachusetts Institute of Technology
Robert Huebert	Employment; applying to medical school fall 1999
Karissa Jannett	Employment
Brandon Juran	unknown
Tim Lindley	Molecular Biology/Medicine Program, University of Iowa
Ben Lynch	Chemistry Graduate Program, University of Minnesota
Minh Nguyen	Chemistry Graduate Program, University of Minnesota in Duluth
Karl Pracht	Geology Graduate Program, Montana State-Billings
Jon Schroden	Physical Chemistry Graduate Program, Cornell University
Erik Severson	Mayo Medical School
Jon Thompson	Chemistry Graduate Program, University of Minnesota
Troy Trboyevich	NW Chiropractic School
Kim Tupa	Employment; graduate school, fall 1999
Winston Willis	Employment; graduate school, fall 1999
Darren Wakefield	Chemistry Graduate Program, University of North Dakota

left to right
row 1: *Fawn Atchison, Vanessa Dufault, Laura Freiburger, Kim Tupa, Christie Haupert, Karissa Jannett*
row 2: *Robert Huebert, Dan Drontle, Minh Nguyen, Tim Lindley, Jon Thompson, Jon Schroden*
row 3: *Mark Erickson, Josh Crum, Ben Lynch, Erik Severson, Winston Willis, Darren Wakefield*
not in picture: *Milan Bajmoczi, Aaron Boeckermann, Brandon Juran, Karl Pracht, Troy Trboyevich*

Graduating Seniors

Thank You

We are deeply appreciative of your support over the past year. Your financial gifts enhance our undergraduate research program, recognize excellence in our Honors students and graduating seniors. We are also grateful to Aspen Research for their recent gift of a GC-MS and to Bristol-Myers Squibb for their donation of a Supercritical Fluid Chromatograph. These instruments provide excellent training for our students and enrich their educational experience in the department.

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