FOUR BIOLOGISTS JOIN FACULTY

By Linda Holmstrand

As a result of the Chancellor’s initiatives to enhance Cell & Molecular Biology and Freshwater Sciences at UMD, plus the need to fill two departmental vacancies, the Biology Department was successful in hiring four new faculty members this past year. Dr. Matt Andrews and Dr. Donn Branstrator were hired in the areas of Cell & Molecular Biology and Freshwater Sciences, respectively. Dr. Tim Craig fills a position vacated by Anne Hershey and Dr. Tom Hrabik fills a position vacated by the retirement of Mel Whiteside. These biologists join Dr. Allen Mensinger, who arrived in January of 2000, as the newest members of the department.

Dr. Matt Andrews came to UMD after 13 years in the Department of Genetics at North Carolina State University at Raleigh, where he was a tenured associate professor. Dr. Andrews has extensive research experience in the use of molecular techniques to identify proteins controlling gene expression. His current work involves the unique proteins expressed in hibernating ground squirrels (actually the thirteen-lined ground squirrel, also known as the Minnesota “golden gopher”). Using new microarray technology that can analyze thousands of genes simultaneously, Dr. Andrews and his research staff are able to screen and compare the expression of genes from hibernators with those of non-hibernators. Since hibernating mammals can slow or stop their organ systems for weeks at a time, this research may hold clues for medical researchers hoping to unlock the secrets of strokes and organ transplants in humans.

Dr. Andrews was attracted to UMD by the proximity of the biomedical community, easy collaboration with researchers on the twin cities campus and also, the availability of hibernating animals in Minnesota. Dr. Andrews and his wife Kate and their two children - Sara, age 11 and Ross, age 9 - are adapting nicely to Minnesota. They are impressed with the school system and love the clean air and outdoor recreational areas around Lake Superior. Already the family has been outfitted with a variety of outdoor equipment and can be found regularly on the local skating rinks and ski slopes.

Dr. Donn Branstrator

“This is just where I want to be,” said Dr. Branstrator when he was asked what attracted him to UMD. He was referring to our northern Minnesota setting which offers the fishing, bow-hunting, biking and camping opportunities that he pursues in his leisure time. A native of Chicago, Dr. Branstrator graduated from Lawrence University in Appleton, Wisconsin, then later received a Ph.D. from the University of Michigan, Ann Arbor. After a postdoctoral experience at the Universite de Montreal, he spent three years as an assistant professor at DePaul University in Chicago, teaching a variety of biology courses while directing graduate students and continuing his own research in plankton ecology. Dr. Branstrator’s research interests center on aquatic food webs, particularly those involving zooplankton organisms, tiny shrimp-like animals found in abundance in the Great Lakes as well as some inland waters. Here at UMD, he is already part of a Sea Grant sponsored program assessing the distribution and productivity of zooplankton in western Lake Superior. The recent encroachment of an exotic cladoceran species Bythotrephes, or (continued on page 2)
On a personal note, Donn has found yet another reason to be happy about coming to Duluth. He recently announced his engagement to Stacy Crawford, who works in the UMD Admissions Office. Donn and Stacy are planning a June wedding, then later in the summer a honeymoon on safari in Kenya, where Donn will be finishing a training course on the limnology of Lake Victoria. They will arrive back in Duluth just in time to begin the fall semester classes and activities.

Dr. Tim Craig is experiencing a memorable first year in Duluth. Not only is he facing the challenge of new teaching responsibilities and the set up of his research program here, he is also coping with a broken hip suffered while skating with his children at the UMD ice arena. Dr. Craig, an insect ecologist, left a tenured associate professor of zoology position at Arizona State University West in Phoenix to join the Biology Department faculty. He formerly held post-doctoral positions at Bucknell University in Pennsylvania and the School of Forestry at Northern Arizona University in Flagstaff, as well as a fellowship from Hokkaido University in Sapporo, Japan. Dr. Craig's research interests involve plant-insect interactions, specifically flies that induce gall formation in certain plants. He has spent time in Minnesota at the Cedar Creek Natural History Area where he studied gall formation in goldenrod as part of an LTER (Long Term Ecological Research) study. Many Minnesotans are familiar with the small larva or "grub" that can be found in galls and are used as bait for ice fishing.

Dr. Craig is building his research program at UMD with the assistance of his wife, Dr. Joanne Itami, an adjunct Professor in the Biology department, who shares his research interests and collaborates on projects that include genetic approaches and techniques. In the future, they plan to pursue two lines of research - one which studies the factors, especially behavioral factors, that regulate insect populations and one which elucidates speciation driven by plant-insect interactions. They particularly like the mix of teaching and research here at UMD. Tim and Joanne decided to move to Duluth because of its location and the quality of life that they felt was lacking in Phoenix. They and their children, Linda - age 9, and Paul - age 6, are enjoying their new surroundings in Duluth.

Dr. Thomas Hrabik
Dr. Hrabik began his UMD career in January at the start of this spring semester, when he immediately walked into the Ichthyology class as his first teaching assignment here. Arriving in midwinter with little preparation time, he had to rely on the Biology department's existing fish collection for laboratory specimens for his class. Thanks to Lyle Shannon and Hollie Collins (retired), previous fish biology instructors, he found plenty to work with, and the class is going well. Dr. Hrabik is a fisheries ecologist and a native of north central Wisconsin; he received his bachelor's degree at Stevens Point. He went on to earn both his M.S. and Ph.D. (1999) degrees in Oceanography and Limnology from the University of Wisconsin, Madison. Most of Dr. Hrabik's research experience is from studies in north central Wisconsin where he has found correlation between the unique chemical, physical and biological factors of a lake's location in the landscape with fish species number and abundance. Minnesota lakes are quite different in their geology, and he is interested in investigating and characterizing the controlling factors for the diversity of fish as well as macrophytes, snails, and other invertebrates. He is also interested in the implications of the presence of rainbow smelt in some northern Minnesota inland lakes; since there is evidence that their introduction has affected populations of ciscoes, and possibly walleye and other game fish. Dr. Hrabik is establishing collaborative relationships for his research with area fisheries agencies and is recruiting graduate students. In addition he has developed and will teach a course entitled "Fisheries Ecology" for upper division students next fall semester.

Like the other new members of the faculty, Dr. Hrabik finds northeastern Minnesota a very desirable place to live and work. He is, to no one's surprise, an avid fisherman and looks forward to visiting the Boundary Waters for fishing, canoeing and camping in his leisure time.

The Biology Department Faculty, Staff and students are pleased to welcome these new faculty members and anticipate for each one, a successful and rewarding career at UMD.

NEW STAFF HIRE
Julie Smith

The Biology Department is pleased to welcome Juline Smith as a Laboratory Services Coordinator. Julie, who officially started in her position on January 1, 2001, joins Randy Hedin in providing laboratory support for the many courses offered by the department. In particular, Julie prepares laboratory materials for the upper division classes. She has a B.S. degree in Biology and Secondary Science Education from UMD and her background includes several years of experience as a research technician in the UMD School of Medicine. In that position, she most recently was involved in a project investigating cardiac muscle cell response to certain types of cancer-fighting agents.

Originally from Grand Rapids, Minnesota, Julie spent a number of years in Phoenix before returning to northern Minnesota. She leads a busy family life with her husband Tim and two children, Zach (14), and Rachael (11), and is involved in many school and community activities.
What? ANOTHER NEWSLETTER?

Linda Holmstrand and Student Editor Megan Kingsley

Newsletters are in vogue. I know. I get a lot of them in the mail - from my credit union, my church, our public school system, our local hospital and a variety of other organizations that I belong to. As a newsletter editor, I worry about this. With a profusion of paper begging for time and attention, what can I do to make this newsletter one that you'll stop and read, instead of tossing in the recycle bin? Read on, maybe I can convince you to spend some time browsing through the Life Scientist.

You're reading this now because you are part of a select group - you have a link to the UMD Biology Department - you're a student, a former student, a graduate, a faculty or staff member, an administrator or maybe just a friend and supporter. Whatever your role, I think there is something in these pages that will interest you. Besides, where else can you get a review of the major happenings in our department throughout the last year... people, activities, challenges, accomplishments... condensed into only twenty short pages? Seriously, someone suggested that I write a story about the newsletter to let readers know how and why we publish the Life Scientist. I'll start with some background.

A newsletter about the Biology department was the idea of Dr. Mel Whiteside, then Department Head, who chose Helen Hanten to create and design the Life Scientist; the name was also her idea. (See the "Visit with a Professor Emeritus" article in this issue.) The first issue, published in January of 1987, was a 12 page publication that included faculty, student and alumni news as well as notes about graduate research activities. An impressive feature of that first issue was the Alumni section, which contained news notes and addresses for nearly 150 alumni of the department! Mrs. Hanten continued as editor of the newsletter for 5 more years, until her retirement in 1992. Those early issues were accomplished without the use of computers and publishing software. Helen relied heavily for technical assistance on her husband Paul, who worked for the Duluth News Tribune and assisted with the drafting and layout of the Life Scientist. She recalls the hours of measuring and pasting the layout and the manual work of typing and making everything totally ready for the camera.

Thanks to technology, newsletters are now put together more easily. Student writers submit completed articles on a floppy disk or email the files to the editor. Photos are taken with a digital camera or pictures can be scanned onto a computer disk. Most of the finished newsletters are then delivered to UDAC, where they are tabbed, addressed, sorted and mailed. Mailing labels come from a variety of sources; the largest number, about 1800, from the UMD Alumni Office. The College Student Affairs Offices - CSE CLA and CEHSP - provide addresses for current Biology students. In addition, the Biology Department maintains a mailing list of campus addresses for other departments, administrators, and interested persons. Annually for the past several years, about 2500 newsletters have been printed and distributed. The cost per copy is nearly $1.00, including postage, and is borne by the Biology Department Gift Account. This account is maintained by gifts from alumni and others that generously support our cause. In addition, newsletters from the previous three years are available through a link from the Biology Home Page (http://www.d.umn.edu/biology). Students play a vital role in the writing of our newsletter - it is both a learning experience and a service commitment to the department. This year, for the first time, we have a student editor, Megan Kingsley, who was responsible for gathering and editing all of the undergraduate articles as well as writing several articles of her own. Megan is a Biology major with a minor in Journalism, which suits her perfectly for this job. Another major contribution is from first year graduate student Charlene Johnson, who spent considerable time compiling information and writing the "Graduate Student Profiles." The thanks of the department go to Megan, Charlene and the other students who volunteered and participated. Acknowledgments can be found on the back page of this newsletter as well as via the "bylines" for the various articles.

The newsletter has become a major outreach tool for the Biology department. Through this medium we hopefully convey who we are, what we've done, and where we're going. We especially want to encourage responses from alumni who have left us and gone out into the "real world." We'd like to know what you're doing and what your experiences and successes have been. Each one of you has a story to tell and it would be great if you would share some of that story with us and the other readers. Many of them are your former classmates. Please feel free to communicate - by phone, letter or email - with me or any of the faculty or staff. We hope to hear from you!

STAFF RECOGNITION

Two members of the Biology Staff were presented with Outstanding Service Awards in acknowledgment of their excellent performance this past year. The recognition included a monetary award and an engraved plaque, presented at a special awards ceremony.

Randy Hedin is an alumnus of the Biology department, earning both his bachelor's and master's degrees in Biology from UMD. He was hired in 1997 as a Laboratory Services Coordinator. Randy received a special project award for maintaining the stockroom and providing support for classes for the academic year 1998-1999, essentially filling two positions, until the hire of a second laboratory services coordinator could be completed.

Ruth Hemming, Executive Secretary of the department for the last 12 years, was given a continuous service award for her initiative and dedication to that position. Ruth is primarily responsible for the smooth management of the Biology department office, as well as providing clerical support for the faculty and assistance in curricular affairs and class scheduling.

Both Randy and Ruth exemplify work "above and beyond" the expectations of their job titles. The department is very fortunate to have their services and congratulate them on this well-deserved honor for outstanding service.
Dr. Conrad Firling is currently on a phased retirement and will conclude his UMD career at the end of the 2001-2002 academic year. The department is currently searching for a faculty member with teaching and research expertise in the area of developmental biology.

Congratulations to Dr. Merry Jo Oursler, who was recently tenured in the Biology Department and promoted to the rank of Associate Professor.

VISIT WITH A PROFESSOR EMERITUS
by Linda Holmstrand

The person selected for this year's feature is Helen Hanten, who retired in 1992, then returned periodically over several years to advise Biology students, retiring again in 1995. She is one of eight former UMD Biology Faculty in retirement that hold the distinction of professor emeritus.

Mrs. Hanten had a long and busy career in her 26 years at UMD. Besides teaching courses in introductory plant biology, non-majors biology and microbiology, she operated the UMD greenhouse for several years and conducted research on the development and abscission of wild rice grains, research that was basic to the emerging industry of paddy-grown wild rice.

Mrs. Hanten also maintained a visible presence on campus as a UEA representative and as a member of the Faculty Advisory Council for Women. During her stay at UMD she participated in the Study in England Program and was the first editor of this newsletter, the Life Scientist, which was created in 1987.

I recently spent a pleasant lunch date with Helen, getting reacquainted and catching up on the details of her current life. She and her husband Paul, who retired from the Duluth News Tribune in 1988, still live in their house on Brainerd Avenue and keep a busy schedule of activities. They recently purchased a "fifth-wheeler" recreational vehicle and will soon take it on a maiden voyage in preparation for their summer adventure. Their plan is to set up camp in Glacier, Yellowstone, or one of the other western national parks and take seasonal jobs as concessioners. Both Paul and Helen are extremely outgoing and Helen has had experience as a park naturalist for the UMD Elderhostel program.

The Hantens are experienced world travelers and have visited, besides England, Turkey, Norway, Greece, Israel, Finland, Scotland and Thailand. Their most recent trip (1999) was to New Zealand. For many years, Helen has been a prominent local leader in her church, particularly in the education of deacons, a service commitment that she will soon relinquish, to concentrate on other things. In her "spare" time, she likes to read contemporary fiction and enjoys being part of a monthly literature discussion group.

The Hanten children are grown up and married, but the family is still close-knit. Their son John and his wife Nancy are both geophysicists. They live in Texas with their daughter Kelley, who is 10. Kathy (Hanten) Malban is a mortgage loan officer with Wells Fargo and lives in Duluth with her husband Dave and children Kaley 11, and Jack who is 7. The youngest daughter Sue, an avid gardener and craft person, and her husband Scott, also live in Duluth. Paul and Helen have been married more than fifty years, and if their current lifestyle is an indication, will continue to be active for many more. All of us in the Biology department wish Helen and Paul a continued happy and healthy retirement.

CURRENT FACULTY GRANTS:

M. T. Andrews P.I. "Genomic Analysis of Cardiac Function During Hibernation", Biomedical Genomics Center Affymetrix Grants Program, 3/19/01 - 12/31/01, $9,900.

M. T. Andrews P.I. "Genomic Screening by Undergraduates", Chancellor’s Faculty Small Grants Program, 3/1/01 - 12/31/01, $750.

M. T. Andrews, Department of Defense AASERT Award, "Characterization of Cold-Tolerant Catabolism in Hibernating Mammals", 7/1/97 - 6/30/01, $85,000.


M. T. Andrews, Whiteside Institute for Clinical Research, "Genomic Analysis of Cardiac Function during Hibernation", 1/1/01 - 12/31/01, $5,000.
R. E. Hicks, Department of Defense AASERT Award, "Characterization of Cold-Tolerant Catabolism in Hibernating Mammals," 7/1/97 - 6/30/01, $85,000.

A. Goyal, Chancellor’s Diversity Grant for Visiting Scientist in the area of Bioinformatics of Natural Products, May-June, 2001, $6000.


R. E. Hicks, (Co-PI), "LiMNology: A Virtual Center for Limnology at the University of Minnesota," University of Minnesota, September 2000-August 2002, $100,000.

R. E. Hicks (Co-PI), M. J. Sadowsky, and L. B. Johnson, "Identifying the Sources of Coliform Bacteria in Coastal Ecosystems and Their Relationship to Land Use," Minnesota Sea Grant Program, 2/1/2001-1/31/2003, $95,460.

M. R. Karim (PI) "Isolation of Mycobacterium marinum and other pathogens from water & fish population of different lakes," Sea Grant College Program, July 1, 2000 - June 30, 2001, $50,000.


Raj Karim, continuation of Bridges Program for Minorities with Dr. Ben Clarke, June 30, 2000, $640,000.


A. F. Mensinger and L. J. Shannon (Co-PIs), "Data acquisition and analysis units for Life Science Laboratories," Technology Fee Award, Spring 2000, $35,600.


A. F. Mensinger (PI) "In-situ biosensors for monitoring fish physiology and behavior," Minnesota Sea Grant, February 2001 to January 2003, $66,000 direct plus graduate student fellowship.


G. J. Niemi "Boreal Owl: its habitat and prey in the Superior National Forest"; Joint funding from the USDA Forest Service and Minnesota Department of Natural Resources, $80,000.

G. J. Niemi "Distribution of Canada lynx in the upper Midwestern States," Joint funding from USDA Forest Service, Minnesota Department of Natural Resources, and US Fish and Wildlife Service, $37,000.

M. J. Oursler (PI), J. Regal (Co-PI), C. Giulivi, L. Drewes; Participants: P. Anderson, A. Boman, B. Clarke, J. Fitzakerely, A. Goyal, R. Hicks, J. Holy, J. Prohaska, G. Trachte, K. Wallace, Center for Biochemistry, Cell and Molecular Biosciences, Graduate School New Initiatives in Interdisciplinary Research and Postbaccalaureate Education Planning Grant. 2nd year funded


C. Johnston (PI), J. Pastor and H. Mooers, “Control of productivity and plant species segregation by nitrogen fluxes to wetland beaver meadows,” National Science Foundation, 1997-2000, $600,000.


C. Richards (Co-PI with John Hobie and 12 others); “Key Connections in Arctic Aquatic Landscapes,” National Science Foundation, 1997-2001, $2,989,784.


FROM THE DEPARTMENT HEAD
by Randall E. Hicks

Randall Hicks
Department Head

During the past several years, the cost, funding and accountability of higher education institutions, teacher salaries, and the productivity of faculty and students at universities have been widely discussed in the press, legislatures, and in private circles. Rightly so! Recently, even the Governor of Minnesota suggested that the salaries of many university professors in this state were higher than his own.

Last month, the Department of Biology was reviewed by a panel of distinguished educators and research scientists from public and private universities in Georgia, Massachusetts, Utah, and Wisconsin. As part of this process, our department completed a self-study and developed a document for these reviewers based on research about our productivity in instruction and research. Many interesting facts about our department, faculty, and students were discovered. I would like to share just a few examples with you.

Did you know that?

• The UMD Biology program is one of the largest UMD undergraduate programs, having served between 400-800 student majors and pre-professional students each year during the past decade.

• The number of undergraduate students graduating from our department has increased steadily since 1989 (>180% increase). Now, more than 80 students graduate each year with B.S. or B.A. degrees in Biology or Cell Biology. Women graduates account for about one-half of these degrees.

• Only 8% of undergraduate students graduating from our department in 1998-99 reported being unemployed or not continuing their education after graduation.

• Only two undergraduate students from UMD have ever won prestigious Barry Goldwater Scholarships; both students majored in Biology or Cell Biology and won these scholarships within the last two years.

• More than 70 different courses are currently offered by the Department of Biology. Almost 3,000 students enroll in these classes each year.

• During the past decade, 200 students have completed a research experience course and more than 350 students have participated in an undergraduate teaching experience.

• During the last 10 years, twenty-two percent of undergraduate students participating in research projects outside class has steadily grown from about 20 to over 40 students per year (a 135% increase). Many of these students have presented their research findings at local, regional, and national scientific meetings including presentations at the U.S. Capitol.

• The Biology Graduate Program has granted eighty-five M.S. degrees since 1988, graduating between 7 and 8 students per year. The largest proportion of these graduates (32%) now work for various federal, state, tribal, county, or local natural resource or environmental agencies. Twenty-two percent obtained teaching positions in small liberal arts colleges, community colleges, or secondary schools. An equal proportion of these graduates entered Ph.D. programs or medical schools. Approximately 12% entered industry or consulting, and an additional 12% are employed as technicians in university laboratories.

• During the past decade, graduate students have been first authors or co-authors on 50 papers published or currently under review in peer-reviewed scientific journals.

• During the past 11 years, our department’s faculty members had more than 150 research and instructional grants funded which when combined totaled more than $14 million dollars.

• Combined, new research grants awarded to faculty members in our department from sources outside the university averaged between $0.6 and $1.2 million dollars each year. These research grants provided employment for Minnesotans, training opportunities for many undergraduate and graduate students, and sometimes summer salary for our faculty members.

• Faculty members in our department published over 200 peer-reviewed scientific papers during the past 11 years, an average of 19 publications per year, or 1-2 papers per faculty member per year.

• Besides instructing their classes and operating research laboratories, Biology faculty members review scientific manuscripts and grant proposals for various national organizations, serve on local, (continued on page 8)
regional, and national panels or committees, volunteer as editors of scientific journals, and act as consultants to industry and government agencies.

• Our faculty and staff members are committed to community service and education. Their combined efforts support local elementary and secondary schools, educational programs for the public, and local and regional environmental organizations.

• In 1988, the Department of Biology had 13 full-time, tenured or tenure-track faculty members. Now, the department has 16 tenured or tenure-track members and 3 full-time instructors.

• No faculty member’s salary in the UMD Department of Biology exceeds the Governor’s salary. In fact, UMD’s pay scale for its faculty members ranks 14th compared to 17 peer institutions.

Faculty members in our department, as in most universities, are not unlike people operating small businesses. They obtain funding that run research laboratories and employ people. They discover new things that were never known before. The ‘products’ they help create are new ideas useful to society, important scientific papers, and well-trained students who are prepared to succeed in the world and professionals when they leave UMD. Unlike many businesses, however, we impart our acquired knowledge to students and share it with society. Yes, accountability is important. Our ‘small businesses’ only succeed if they are productive and create ‘goods and services’ that are valued.

We continue to be a department that emphasizes undergraduate education. I see our program as a blend of high-quality undergraduate instruction, significant research programs, strong graduate training, and outreach of biological knowledge and understanding. Our departmental strength in research continues to feed undergraduate as well as graduate research opportunities. Positive changes are continually occurring here. I am excited about the direction our department is taking. We hope you are as well after reading this year’s issue of the Life Scientist.

GRADUATE STUDENT COMMENCEMENT

The University of Minnesota Graduate Commencement was held on Thursday, May 11, 2000, at Romano Gymnasium on the UMD campus, with Dr. John Pastor, recipient of the first Chancellor’s Award for Distinguished Research, delivering the commencement address. Dr. Pastor is a Biology Department professor and senior research associate at the Natural Resources Research Institute. The Master of Science degrees in Biology were awarded to:

- Simge Akbulut
- Gaea E. Crozier
- Steven C. Garske
- Michael Gillespie
- Scott P. McGovern
- Jean M. Mengelkoch
- Kay M. Rezanka
- Jay O. Sandal
- Aubie Shaw
- Tamara A. Swanso

GRADUATE STUDENT PROFILES

by Charlene Johnson

Jennifer Schreiber, a research assistant in Dr. Hicks’ lab, is studying the viability and imasiveness of Salmonella typhimurium in aquatic environments. She is a graduate of Concordia College and hails from Wyoming, Minnesota. Jennifer plans to graduate with her M.S. in Cell Biology under the advice of Dr. Randall Hicks.

Matthew Olson is a Graduate Teaching Assistant (GTA) for General Biology, Experimental Immunology, and Microbial Ecology while studying the effectiveness of alternative on-site wastewater treatment systems in removal viral organisms from fecal material under the advice of Dr. Randall Hicks. He hopes that his research will lead to a solution to the growing problems in small lakeshore communities that utilize ineffective septic systems. He is a graduate of UMD and hopes to obtain his PhD after finishing the masters program in Biology in the spring of 2002.

Kari Dresback-Thralow graduated from the University of Minnesota Duluth in May 2000, with a B.S. degree in Cell Biology. She immediately entered the Biology masters program at UMD under the supervision of Dr. Arun Goyal. Her thesis project is on the use and manipulation of plant life to remediate toxins (phytoremediation).

Ayuko Kassell is studying the potential use of hybrid poplar in phytoremediation of trichloroethylene (TCE). She is a graduate of the University of Wisconsin-Madison with degrees in both Zoology and Japanese. She plans to receive her M.S. in Biology in the Fall of 2001. Ayuko is also under the wing of Dr. Arun Goyal and has been a GTA in General Biology during the past year.
Mike Callahan, a Florida Institute of Technology native has a degree in Marine Biology and Molecular Biology. He currently is working with Dr. Allen Mensinger on nerve regeneration in a freshwater teleost Stizostedion vitreum (Percidae). Mike is a GTA in Human Anatomy and Biology and Society. At the 29th Annual Society for Neuroscience Meeting, he presented a poster session on the cutaneous receptor density in the Atlantic stingray: sexual dimorphisms and functional significance during mating. Mike hopes to earn his PhD in nerve regeneration on the electrosensory system of an elasmobranch after he finishes with his M.S. in Biology in the fall of 2002.

Jennifer Milan is busy working with Dr. Lucinda Johnson on the behavior of larval amphibians in relation to differences in canopy cover, amount of PAR and UV-B radiation, and understory vegetation in both terrestrial and aquatic habitats to determine the significance of habitat on the gross malformations recently found in frogs. These malformations are hypothesized to be attributed to development in the larval stage. Jennifer is a research assistant at NRRI working on a project entitled “Effects of forest fragmentation on community structure and metapopulation dynamics of amphibians.” She is a graduate of Northland College in Ashland, Wisconsin where she earned her undergraduate degrees in Biology and Mathematics. She hopes to complete her M.S. in Biology in Fall of 2002.

Charlene Johnson, a graduate of UMD, is working with Dr. David Schimpf on the potential vegetation composition of a wetland created from dredged sediment in the Duluth-Superior harbor by investigating the viability of the seed bank present in such sediments. During the spring semester, Charlene could be found creating a seedling herbarium of wetland plants grown from seeds collected at local wetlands to use as a reference for plants grown from the experimental dredged sediments. She is currently at GTA in General Biology II and enjoys spending time with her husband, Jeff, in the vast wilderness of northern Minnesota.

Christina Miller received her B.S. in Biology in 2000 from the University of Minnesota Duluth. She entered the graduate program the last fall, and is working with Dr. Gerald Niemi on the effects of residential and commercial developments on forest birds. During the last year, Christie was a GTA for General Biology II and also served as a student lab coordinator.

Chris A. Mozinski received her BS in Biology with a minor in Environmental Science in May 1992 from Rensselaer Polytechnic Institute in Troy, NY. Upon graduation, she was commissioned a 2nd Lieutenant in the US Army as a Chemical Officer for an Attack Helicopter Battalion, Platoon leader for a Smoke Platoon, and Environmental Liaison. Upon completion of her military obligation, she spent 18 months working various temporary assignments helping to clean up superfund sites and brownfields. In 1996, she worked as a Biological Observer in the commercial fishing industry in Alaska. She is currently studying how herbivory and plantこともある the structures of aquatic food webs and the nutrients that cycle through them, under the joint supervision of Dr. Andrew Klemer and John Pastor.

John Wallace received his B.S. in Biology in 1986 from the University of Nebraska at Omaha. After working for five years as a microbiologist in a pharmaceutical company, he taught biology in the public schools for nine years, both in Phoenix, Arizona. His thesis research, under the direction of Dr. Timothy P. Craig, will examine preference performance linkage in a bruchid beetle native to the Sonoran Desert.

Matthew Roforth is wrapping up his career as a graduate student at UMD in the summer of 2001. Matt received his B.S. in Biology with a minor in chemistry in 1999 from Bemidji State University. Matt's thesis research is on the effects of glucocorticoids on the replication of HSV-1. He is a veteran GTA of General Biology I.

Lisa Belmonte is working with Dr. Gerald Niemi on the habitat use of boreal owls at the landscape scale during the breeding season through the use of radio-collars and radiotelemetry. Lisa is a graduate of Black Hills State University and was originally from West St. Paul, Minnesota. Lisa is a GTA in Human Anatomy and hopes to finish her research in December 2001.

David Vandermuelen, a graduate of Michigan Technological University, is busy drafting his thesis on the plant litter quality and decomposition in northern peatlands. He has been a GTA for Gene-ral Biology I and II as well as Ecology Laboratory. David is a Water Resource Science student under the advisement of Dr. John Pastor and hopes to finish his M.S. in Biology in the fall of 2001. After graduate school, he hopes to work in the water quality division of a private or government agency.

Matt Thompson is anticipating the end of his graduate career this spring as he wraps up his project on the “Comparison of Betulin and Allobetulin-lactone to Acyclovir on Herpes Simplex Virus Type II glycoprotein C synthesis and virus infected cell cycling.” While working under the advisement of Dr. Raj Karim, Matt has been a GTA for General Biology I and II, Plant Biology, Animal Biology, Microbiology, Plant Biochemistry and Molecular Biology, and Histology. While Matt’s long-term goals are to become a physician, he will spend this coming summer as a UPS driver, collecting “Hamms” beer paraphernalia, and reflecting on his spring break trip to London and Paris.

Brady Mattson is also anticipating the end of his graduate career this spring as he finishes his thesis work on the relationships between habitat and nesting ecology of forest songbirds under the advice of Dr. Gerald Niemi. Brady is happily married to his wife, Cara, and is planning to begin his PhD in the fall of 2001. Brady's hopes for the future are to work for an educational institution or perhaps the Nature Conservancy, but he will be spending the next summer field season extending his research in Aitkin County, MN.

(continued on page 10)
Anne Gingery received her B.S. in Biology in 1991 from the University of Minnesota Duluth. Anne worked as a research scientist at the Natural Resources Research Institute from 1991-1996. Subsequently, she worked as a research reviewer and scientific database programmer at the Environmental Protection Agency from 1996-1998. Anne began work part time on her MS degree with Dr. John Pastor in 1992. Her project was concerned with nutrient cycling in compost systems. In 1998, Anne began working on her Ph.D. in Biochemistry and Molecular Biology with Dr. Merry Jo Oursler. Anne’s thesis research is concerned with the effects of Transforming Growth Factor-β (TGF-β) on osteoclast survival and the related signal transduction pathways by which TGF-β signaling occurs in the osteoclast.

Cory Kending received his bachelor’s degree in Biochemistry from Knox College in Galesburg, IL. During his summers there he interned in a plant physiology lab studying the heat shock response in barley. He then worked for Howard Hughes Medical Institute before coming to UMD. Under the supervision of Dr. Giulivi, Cory began his thesis research on the role of nitric oxide synthase in mitochondria.

Brendan Keough received his B.S. in Biochemistry/Molecular Biology in December of 1996 from Marquette University in Milwaukee, Wisconsin. After working as a research assistant at Marquette University for one year, he entered the graduate program in Biology at the University of Minnesota Duluth in December of 1997 under the supervision of Dr. Randall Hicks. His thesis research investigates the nucleic acid compositions of picoplankton in great lakes on three continents, with more extensive analysis focused on an unusual microbial group, the Archaea.

Antoinette Lamkin earned a B.S. degree in Biology and a B.A. degree in Psychology in 1998 from the University of Minnesota, Twin Cities. She spent her summers conducting research with professors in the Psychology and Pharmacology Departments as well as the School of Medicine. She investigated topics as diverse as (1) familial eye tracking dysfunction as a marker for schizophrenia and (2) a murine model of susceptibility to immunologically mediated fatigue. Since Fall 1999 she has pursued her M.S. degree with Dr. L. R. Drewes, Head, Biochemistry and Molecular Biology Department, UMD School of Medicine. Her thesis research entails identifying and characterizing a new monocarboxylate transporter (MCT7) in rat brain.

Christian Matson received his B.S. in Biology and Chemistry in 1996 from Northland College in Ashland, WI. After graduating, he spent three years working as a chemist for Abbott Laboratories in Chicago, IL. He then entered the graduate program at UMD in the spring of 2000 under the supervision of Dr. Lester Drewes. His research is on the role of monocarboxylate transporters in the blood brain barrier.

Mark Pranckus received his B.S. in Biology in 1996 from Indiana University. He worked for an ecological restoration company before starting his graduate program in 1998 with Dr. Carl Richards. His thesis research is on woody debris function and aquatic invertebrates in southeastern Minnesota streams.

Aubie Shaw received her B.S. in Biology in 1998 from the University of Minnesota. She immediately began work on her M.S. in Biology under the advisement of Dr. Merry Jo Oursler at the University of Minnesota. She received her M.S., titled “Metastatic Breast Cancer: Regulation of Osteoclast Differentiation by Growth Factors,” in 2000. Currently, she is working on her Ph.D. in Biochemistry, also under the advisement of Dr. Oursler. Aubie is examining the molecular mechanism by which apoptosis is regulated by tumor necrosis factor in osteoclasts.

OUTSTANDING GRADUATE TA AWARD

The Biology Department’s selection for the Outstanding Graduate Teaching Award for the 1999-2000 academic year is Mary Karst. Mary is a native of Fergus Falls, MN and received her B.S. degree in Biology from UMD in 1997. As a teaching assistant, Mary taught laboratories for General Biology and Developmental Biology classes. Mary’s teaching skills were put to the test this past year as she was hired as a full-time biology instructor at Mesabi Range Community College in Virginia, MN. There she has taught a variety of courses including Microbiology, Environmental Science, Contemporary Issues of Biology and Basic Human Biology. Mary’s plans are to finish her thesis at UMD this summer and then to find a college teaching position again, an experience she really enjoys. Long-range plans are uncertain, but she says she may go back to research after a few years. Congratulations, Mary, on your award and best of luck in your career.

Mary Karst receives the Outstanding Graduate Teaching Award from Director of Graduate Studies Dr. David Schimpf.
Sigma Xi is a scientific research society with an international membership of scientists and engineers, who represent colleges and universities, government laboratories and industry research centers. The Society publishes the American Scientist as well as awarding grants to researchers and sponsoring a variety of programs supporting science education, science policy and the public understanding of science.

This past year, the Duluth chapter of Sigma Xi was one of 10 top chapters in the nation awarded a Certificate of Excellence for exceptional chapter activity. In February, the UMD chapter of Sigma Xi held a four day poster exhibit in the atrium of the School of Medicine to present recent research information to the local scientific community. Exhibits featured research projects in the areas of biology, chemistry and medicine. Best Poster Awards were given for Undergraduate Students (Crystal Grund, Peter Keyel, Sharon Kunkel and Bridget Soderberg); Graduate Student Brendan Keough and Post Doc Durba Ghoshal. The following poster exhibits were presented by Biology Department faculty and students:


“Glycoprotein Expression in Betulin- and Acyclovir-Treated Herpes Simplex Virus-2 Infected Vero Cells”. Peter Keyel, B. Clarke and Raj Karim.


“Effects of Glucocorticoids on the Replication of Herpes Simplex Virus Type 1 (HSV-1)”. M. Roforth, D. Ghoshal, S. Basak, R. Karim and A. Goyal.


COM MENCEMENT 2000

UMD's 100th Undergraduate Commencement was held on Saturday, May 13, 2000, at the Duluth Entertainment and Convention Center. The commencement address was delivered by U.S. Representative James L. Oberstar, Chisholm native and long-time UMD supporter, currently serving his 13th term representing Minnesota's Eight Congressional District. Oberstar was also awarded an Honorary Doctor of Laws Degree at the ceremony. More than 725 students and 100 faculty members participated. The list of Biology degrees conferred also includes those completed during August of 1999 and December of 1999.

B.A. Biology Degrees Awarded
Deanna S. Christenson
John P. Juaire
Jessica E. Musch
Paul A. Olson
Kara L. Pickering
Stephanie J. Sandberg
Patrick D. Stangl

B.S. Biology Degrees Awarded
Elliott R. Adams
Bijoma M. Amundsen
Todd E. Amunrud
Daniel B. Andretta
Suzanne L. Baumann
Sonja M. Bjerk
Kathryn June Boucher
Kelly A. Bredahl
Lionel R. Brounts
Gerald S. Buntin
Kate Ann Carlson
Vincent J. Carlson
Ricci A. CaraDeCalvo
Sarah A. Como
Kelly L. Davidson
Jennifer Lynn Dickmann
Paul E. Drevnick
Russell A. Dylla
Jennifer E. Elijah
Rebecca A. Flinn
Gary W. Fuerstenberg
James A. Gobrisch
Shayna Gotvaslee
Jeffrey J. Grabow
Brittany S. Graham
Nicholas A. Haglund
Barbara L. Herring
Jay D. Hildenbrand
Lucas H. Hintermeister
Charles W. Hitchcock
Michael J. Hoffman
Mami D. Hogen
Rhonda S. Horstman
Andrew A. Jacobson
Charlene C. Johnson
Jesse M. Knapp
Melanie A. Lamprecht
David P. Law
Heather A. LeClaire
Jonathan C. Lenz
Mikkie L. Malloy
Ryan J. McCarty

Erin S. Medin
Kristin K. Meilgren
Stephen D. Menning
Mary L. Moe
Daniel J. Munt
Benjamin D. Nelson
Michael P. Newfield
Shaun T. O’Keefe
Eva R. Olson
Matthew R. Olson
Robyn L. Pederson
Christina M. Peloquin
David K. Petersen
Jodi A. Peterson
Jeffrey A. Romfo
Brian J. Ross
Kelly D. Runke
Jeffrey Bruce Rykken
Jason E. Salo
Vanessa T. Schmidt
Teresa M. Scholes
Patrick J. Sherman
Jesse P. Shuck
Laurie S. Steen
Christian M. Sutter
Sarah J. Syria
Tara L. Terho
David J. Thoen
Kristopher J. Uber
Michael A. Vacek
Mary J. O. Vierkant
Christopher J. Waneke
Jessica B. Wubbels
Melanie L. Yrjo
Laurie A. Yunker

T.O. ODLAGU AWARD
by Becky Bolstad

The T.O. Odlaug Award is given out yearly in honor of long time biology professor and department head, Dr. Theron O. Odlaug. The award is given to an outstanding biology student who shows strong leadership qualities and service to the department. A reference book of the recipient’s choice is the award.

This year’s T.O. Odlaug Award recipient is Rachel Makarrall. Makarrall is currently taking some time off school and working as a horticultural technician. She is looking into a few graduate schools, including the University of Michigan Ann Arbor. Upon entering, she may pursue biological illustration, animal behavior, or possibly another avenue of biology. Makarrall on her years at UMD: “It has been a stressful four years, but I really appreciate everything the faculty did for me. They really inspired me. They are great people to get to know and [they] welcomed me to the school.”
FRESHMAN BIOLOGY

OUTSTANDING

AWARD

by Molly K. Martin

Jeremy Erickson

This year's winner of the Outstanding First Year Biology Student Award is Jeremy Erickson. Currently, the twenty-year-old Duluth native is finishing up his sophomore year as a biology major. Jeremy said he was grateful to win the award and more than a little surprised. “I didn’t even know I was up for it,” he said.

The Outstanding First Year Biology Student Award is given to an incoming freshman that has excelled in the introductory biology courses. In addition to the award itself, the student also receives $100. A student can become eligible to receive the award if he or she has a high number of total points from both the lecture and laboratory portions of the introductory courses. Students must also be recommended by their teaching assistant. To earn this recommendation, the student not only has to get good grades, but also demonstrate an enthusiastic attitude towards biology, show leadership in the classroom settings, and have a good understanding of general concepts.

Although winning this award was an honor for Jeremy, he says it hasn’t really affected his life too much. Like many students, Jeremy isn’t quite sure what he’ll do after he graduates. Currently, he plans to go to graduate school. Congratulations, Jeremy, and good luck in the future!

PRE-VETERINARY

MEDICINE AWARD

by Sharon Kunkel

The Pre-Veterinary Medicine Award was first offered in 2000. It is sponsored by the pre-veterinary medicine advisor, Dr. Reza-ul (Raj) Karim and his family in honor and memory of his father. A plaque and monetary award is given to a sophomore or junior with a minimum GPA of 3.4 who plans to attend veterinary school. Applicants must have knowledge of the veterinary profession and have experience working with a veterinarian and caring for animals. They are also judged based on leadership skills, community involvement, work experience, and extracurricular activities.

Raku Petterson was the first recipient of this award. She intends to finish up her biology degree next year. Petterson hopes to apply to the veterinary school at the University of Minnesota, and ultimately would like to become a small-animal veterinarian. She currently is a volunteer at both the City of Duluth Animal Shelter and at the Damiano Center.

TURCOTTE

SCHOLARSHIPS

by Tara Hoff

The Turcotte Scholarship is given in honor of Ed and Alma Turcotte and is awarded to motivated, high-achieving biology and cell biology majors with demonstrated financial need. Two $1000 scholarships are given each year. Recent winners include Venu Nayar from Savage, MN, and Ann Torborg from St. Joseph, Minnesota. Venu is a biology major who is involved in the Undergraduate Research Opportunities Program here at UMD. She is working on an anti-fungal drug against Candida yeast under advisor Dr. Raj Karim. Venu is also involved in SERVE, a volunteer organization at UMD. This past year she was named senior director. Venu hopes to attend medical school in a couple of years to become a physician.

Ann is also a biology major, currently in her third year at UMD. She is president-elect for the Pre-Vet Club this year, and was previously the secretary. She has also been a math tutor and is involved in the Best Buddies program at UMD. In addition, Ann is a tour guide for the Admissions Office. She hopes to attend veterinary school to become a veterinarian specializing in small animals. Congratulations to both of them!

T.O ODLAUG

SCHOLARSHIP

by Becky Bolstad

The year 2000 was first year the T.O. Odlaug Scholarship was awarded. The $1000 award is given annually to two UMD biology students who are in good academic standing and present both need and merit. The 1999-2000 recipients were Sarah L. Huth and Barbara (Isaacson) Lester.

Sarah Huth hails from Bloomington, Minnesota, and is a junior biology major with a chemistry minor. After graduation, she plans to move to San Diego, California, and take a year off school. Later, she plans to attend the University of California San Diego Medical School and specialize in obstetrics. Says Huth, “I enjoy helping people and taking care of those who need assistance. I adore babies and the miracle of birth fascinates me. I feel that a position in obstetrics would suit me and that society would be able to benefit from my work as well.”

Barbara Lester is from Ackly, Minnesota, and is a senior biology major. Growing up on a small farm has shaped her career goals. After graduation, she would like to attend veterinary school and become a “mixed animal” veterinarian. Says Lester, “Animals are my passion. I find it very fulfilling to be able to provide a better quality of life for them. I want to devote my life to providing care to the pets of today’s families. By preventing and treating disease in my future patients, I will not only improve their lives, but also their owner’s lives as well.”
The Undergraduate Research Opportunities Program (UROP) is an excellent way to involve students in the research process. It is designed to allow undergraduates the chance to work on actual research projects under the guidance of a faculty member. Students who receive this award gain valuable first hand knowledge into the researching process.

In order to be eligible for the UROP award a student must be enrolled in a baccalaureate or pre-baccalaureate program in any of the participating colleges at any of the four University of Minnesota campuses. A faculty member from any area of interest, college, or even from another University of Minnesota campus may serve as a UROP sponsor. The sponsors not only gain the assistance of the students in conducting their research but also are responsible to instruct and supervise the student during the project.

Since 1985, students have competed for the award, which can provide a stipend up to $1,400 and/or an expense allowance up to $300. Each student may submit up to two proposals for research projects they would like to participate in. Annually about 400 students receive the UROP award presented by the Vice President for Research and the Dean of the Graduate School at the University of Minnesota.

The recipients of the Spring 2000 UROP award from the University of Minnesota Duluth are:

- Shilpa Gupta  
  Major: Biology  
  "Glycerol Synthesis for Possible Elimination of Aflatoxin in Plants"  
  Sponsor: Arun Goyal

- Dan Kamben  
  Major: Biochemistry/Molecular Biology  
  "Assessment of the Ecological Risk of Endocrine Disruptors"  
  Sponsor: Arun Goyal

- Joseph Preusser  
  Majors: Geology and Biology  
  "Intrastratal solution of heavy minerals in concretions and adjacent sandstones"  
  Sponsor: Richard Ojankangas

- Marte Thabes  
  Major: Biology  
  "Effect of Coarse Woody Debris on Small Mammals"  
  Sponsor: Gerald Niemi

- Bridget Thompson-McInnes  
  Major: Computer Science  
  "Collection and Maintenance of the Midwater Eelpout, Malanostigma pammelos"  
  Sponsor: Allen Mensinger

The winners of the Fall 2000 UROP award from the University of Minnesota Duluth are:

- Crystal Grund  
  Major: Cell Biology  
  "Antibacterial Effects of Azadirachta indica Extracts on Escherichia coli, Streptococcus pyogenes and Staphylococcus aureus"  
  Sponsor: Raj Karim

- Shilpa Gupta  
  Major: Biology  
  "Glycerol Synthesis for Possible Elimination of Aflatoxin in Plants"  
  Sponsor: Arun Goyal

- Belissa Ho  
  Major: Biology  
  "Identification of the MCR-5 mRNA levels by RNase Protection Assay"  
  Sponsor: Benjamin Clarke

- Peter Keyel  
  Majors: Chemistry and Biochemistry  
  "Protein Expression of Herpes Simplex Virus Type II Infected, Betulin Treated Vero Cells"  
  Sponsor: Raj Karim

- Lisa Lenertz  
  Major: Biochemistry  
  "The Role of ASK-1 in the TNF-oc-induced apoptosis pathway in osteoclasts"  
  Sponsor: Merry Jo Oursler

- Jeremy Marincel  
  Major: Biology  
  "Oviposition Preference and Offspring Performance in a Bruchid Beetle"  
  Sponsor: Timothy Craig

- Andrea Michael  
  Major: Biology  
  "Influence of Dietary Phytochemicals on Chemotherapy of Melanoma"  
  Sponsor: Jon Holy

- Venu Nayar  
  Major: Biology  
  "Determination of Molecular Mechanism of Polyethyleneimine Derivatives of Betulin against Candida Species"  
  Sponsor: Raj Karim

- Sarah Pollema  
  Major: Biology  
  "Predator-Prey Interactions of Walleye Fish"  
  Sponsor: Allen Mensinger

- Andrea Michael  
  Major: Biology  
  "Influence of Dietary Phytochemicals on Chemotherapy of Melanoma"  
  Sponsor: Jon Holy

- Venu Nayar  
  Major: Biology  
  "Determination of Molecular Mechanism of Polyethyleneimine Derivatives of Betulin against Candida Species"  
  Sponsor: Raj Karim

- Sarah Pollema  
  Major: Biology  
  "Predator-Prey Interactions of Walleye Fish"  
  Sponsor: Allen Mensinger

- John Schwalbe  
  Major: Biology  
  "Cyanobacterial Dominance in Light Limited Aquatic Environments"  
  Sponsor: Andrew Klemer
When starting out in those general biology and chemistry courses, graduation day seems ages away. For these seniors graduating with their bachelor of science degrees, the days of Biology 1011 are in the distant past and the future holds many possibilities.

Brandon Barnes hails from Esko, Minnesota, with his biology major and pre-dentistry emphasis. He is applying to dental school. He'll spend his summer working as he waits to hear back from the dental admissions. His favorite Biology major class was Intro to Physics because it developed his abstract thinking skills. He says that Invertebrate Biology taught him much about the "hatching and migration of insects," which helped him become a more knowledgeable fly-fisherman.

A biology major who followed the pre-medicine track, Heather Zahn's primary interest is psychology. She has applied to grad schools with programs in public health and human development. Her alternative plan to graduate studies is to attend the University of Minnesota Minneapolis campus and earn a child psychology or family social science B.S. degree. Her advice to freshmen and sophomores is "plans change...develop your interests throughout college". Her favorite college course is Molecular Biology. She says it is "interesting, laid-back, and there's room for discussion". She notes her sorority, Sigma Phi Kappa, helped her meet and get to know people outside her major she normally would not have socialized with or met.

Sharon Kunkel of Maple Lake, Minnesota, will graduate with a cell biology major and a minor in chemistry. This summer she plans to spend a month traveling Europe. In September, she will join Americorps for a year. After that, she says she will "maybe work in a lab or hospital or go to grad school". Some significant life experiences she notes include working at Camp Friendship, a camp for people with disabilities. Sharon says "This [experience] opened up my eyes to an appreciation of diversity," and she has made contacts there that she will visit on her European travels. Her favorite biology class was Molecular Biology Lab. She liked that it was based on relatively new discoveries in the field. In her undergraduate research lab with Raj Karim this year she "learned many lab techniques that will help me in the future". She attended NCUR (National Conference for Undergraduate Research) in Kentucky over spring break.

With a dream to one day be a professor, Bridget Soderberg is graduating with a biology B.S. this spring. She'll spend the summer waitressing at Bellesio's and a few weeks traveling Ireland. She says that working in Raj Karim's undergraduate research lab was a life changing experience for her. She spent spring break in Kentucky at NCUR. The classes she found most useful in her undergraduate studies were physiology and cell biology. Bridget plans to take next year off, and then apply to graduate schools as diverse as Seattle, Washington, and Rochester's Mayo Graduate School to study immunology. She has done research on Herpes simplex viruses I and II. Her advice to undergraduates beginning the biology major is: "Don't worry, it gets better."

Peter Keyel will be doing graduate studies in gene therapy next year. Until then, he will be taking a break from intensive lab research this summer to visit family. A double major in chemistry and biochemistry, Peter has had a good experience at UMD. "I think there is a unique atmosphere at Duluth," he says. He believes the professors here are interested in getting students into research. Peter mentioned his involvement in several different campus clubs. In the biochemistry/chemistry club he has helped put on the "chem shows" for 4-Hers, elementary students, and various other groups over the past few years. He has done much kayaking through Wuda Wooch and says he prefers kayaking the rapids of the St. Louis River to the waves of Lake Superior. He is also active in Lutheran Campus Ministry. Peter's culmination of experiences at UMD has shaped who he is today. His advice to freshmen and sophomores is "Get involved in research [but] don't get too busy" and "Use the Force". He says it is also good to take time out for yourself to de-stress. If he could go back in time and choose an undergraduate college again, he would choose UMD.
BIOLOGY CLUB

“Where the Wildlife Is”
by Crystal Grund

The Biology Club is an outlet for students to meet and relax with other students through many social and educational events. The club has grown to over 70 students this year, and has added two new officer positions. The goal of the club is for all members to become involved and enjoy all the fun, social activities.

We have enjoyed outings and pizza parties so far this year, and are looking ahead to many more. In March, we are planning to see “Sharks” at the Duluth OMNIMAX and start our T-shirt fundraiser. Our most exciting event will be celebrating Earth Day on April 26th. We are honored to present Dr. Keegstra as the Earth Day guest speaker in the Spectrum Lecture Series. As a finale to our year, our club is looking forward to hosting the annual biology department spring picnic and meeting new members for the upcoming year.

Biology club officers for the 2000-01 school year are: Megan Gladen, president; Crystal Grund, treasurer and secretary; Jenny Koenig, undergraduate representative; Erin Peterson, activities. For more information about the biology club, visit us at: www.d.umn.edu/biology/club/home.html

PRE-DENT CLUB

by Cory Larson

The Pre-Dent Club has had an active year and club membership is continually increasing. The club’s primary purpose is to bring together students with an interest in the dental profession. Meetings take place about once a month and provide information about dental school. Last semester, recruiters talked to us about military scholarship opportunities and a group of club members took a trip to the University of Minnesota Dental School in Minneapolis for Career Day. This past year, we also hosted several dentists who spoke about all aspects of the profession and what it is like to have a private practice. We are interested in becoming part of the American Dental School Student Association next year and hosted a speaker from that group.

The PreDent Club also has some social meetings and participates in several fundraising activities. If you are interested in the Pre-Dent Club, contact Cory Larson at clarson5@d.umn.edu. Club meeting times and places are posted in the Life Science building.

PRE-VETERINARY MEDICINE CLUB

by Aaron Hokanson

The object of the Pre-Veterinary Medicine Club is to provide students with an opportunity to meet others with a common career goal and to learn about the life of a doctor of veterinary medicine. This is accomplished through a variety of social and educational activities. These events provide an atmosphere in which members can share knowledge of the veterinary profession and share ideas and information with others.

The club “kicked off” the year with its annual fall picnic in the backyard of Dr. Raj Karim, our club advisor. We had a good turnout and it provided incoming freshman with an opportunity to meet members as well as many of the biology department faculty. We also held an enjoyable Halloween pumpkin carving/pizza party this year.

Future plans include a behind-the-scenes tour of the Lake Superior Zoo, where we will observe feeding habits, view x-rays, and examine blood samples. We also plan to visit the North Shore Veterinary Hospital to learn about alternative treatments such as acupuncture and herbal remedies. In April, we will be taking a trip to St. Paul to attend the University of Minnesota College of Veterinary Medicine’s annual open house. During this time, we will learn about the admission process and will be receiving an informative tour given by a UMD graduate who is a current U of M Veterinary Medical School student. Other club activities planned for this year include a bowling and pizza night, as well as a spring picnic.

Anyone interested in becoming a member of the Pre-Veterinary Medicine Club should contact Aaron Hokanson at ahokanso@d.umn.edu.
PRE-MED CLUB
by Jared Reese

The Pre Medicine Club is wrapping up another successful and fun filled year. We got started with an introduction to the Club (along with some tasty pizza) and an opportunity to welcome new members. At our next meeting (Halloween Eve) we had the club's favorite, the cadaver lab tour. Accompanying us to the lab were a handful of first year medical students who gave us the inside scoop on medical school as well as a brief anatomy lesson. Recently we were privileged to have Dr. Lillian Repesh, the Associate Dean for Admissions at UMD’s Medical School, come and share with us how the admissions process works as well as answer any questions we had. We all left with a better understanding of what it takes to get into medical school.

Our mission as a club is to provide a supportive and enriching environment for all students who share a passion for a career in medicine. Currently we are about 30 strong and our members are pursuing a wide variety of health care careers such as physician, physician’s assistant, nurse practitioner, chiropractor, and physical therapist, just to name a few. For more information about the Pre Med Club contact Jared Reese (rees0059@umn.edu), or any of our members.

Officers for this year are Ben Phipps, president; Alex Thompson, vice president; Venu Nayar, fundraising; Cale Pennings, treasurer; Jared Reese, secretary; Ann Marie Brown, public relations.

PreMed Club Officers Front to Back and L to R: Venu Nayar, Ann Marie Brown, Alex Thompson, Jared Reese and Ben Phipps

PRE-OPTOMETRY CLUB
by Dena Bauer

The UMD Pre-Optometry club is a new club that has been busy recruiting new members this year. The club officers are Dena Bauer (junior), Emily Dold (senior), and Barry Fuchs (junior). The club is a great resource of information for those interested in the great profession of optometry.

This club presents the perfect opportunity for students to learn more about the profession of optometry along with learning more about the Optometry Admissions test (OAT), various optometry schools, recommended classes and other requirements for entry. Members who have in the past and recently been accepted into optometry school also are available to answer questions and share their experiences.

Future plans include appearances by guest speakers in the profession of optometry and taking a trip to a doctor's office to see first hand what the job includes. For anyone interested in joining, contact either Dena (dbauer@d.umn.edu), Emily (edold@d.umn.edu), or Dr. Conrad Firling, the pre-optometry advisor.

PreOptometry Club Officers (L to R): Emily Dold, Barry Fuchs and Dena Bauer
CONGRATULATIONS TO...

Sarah Elfering, winner of the Winchell Award, the top Minnesota Academy of Sciences award for 2000. Sarah is a Biology major working with Dr. Cecilia Giulivi.

Katherine Stephenson, junior Biology major, who was recently awarded a prestigious Barry M. Goldwater Scholarship for the academic year 2001-2002. Katherine was one of 302 undergraduate scholarship winners from the fifty states and Puerto Rico. Her career goals are to earn a Ph.D. in marine biology and to teach and conduct research at the college level.

Sarah Pollema and Katherine Stephenson for selection from a field of undergraduate applicants for NSF-REU fellowships in the Marine Models in Biological Research Program at the Marine Biological Laboratory, Woods Hole, MA. They will be studying toadfish physiology in the Marine Biological Laboratory, Woods Hole, MA.

Nicole Gilles, who received a $500 award as one of the winners of the Student Web Contest. Nicole’s faculty sponsor was Lyle Shannon. Her web site was designed for the ecology lab course applicants for NSF-REU fellowships in the Marine Biological Laboratory.

Vanessa Strom and Adam Huneke, junior Biology majors, on their selection for the Early Admission Program at the University of Minnesota School of Dentistry. They will both in the entering class of 2001.

ALUMNI NEWS

Robert M. Kittay (B.S. ’78) lives in Pierre, SD where he is employed by the Drinking Water Program of the South Dakota Department of Environment and Natural Resources. He is also the varsity hockey coach in Pierre.

Beth Middleton (M.S. ’83) authored “Wetland Restoration, Flood Pulsing and Disturbance Dynamics” (1999, Wiley NY). She is on the faculty of Plant Biology at Southern Illinois University at Carbondale.

Jack Erickson (M.S. ’90) is a coldwater biologist for the State of South Dakota. Since leaving UMD he completed an M.S. in Civil Engineering and is working toward a Ph.D. in Water Resource Engineering, focusing his doctoral research on the impacts of urbanization and stormwater on brown trout populations. Jack and his wife Anita plan to visit Minnesota this fall.

Ryan Hankins and Shawn Lavelle, two of only 68 students from throughout the U.S., who traveled to Washington, D.C. in March, 2001, to present a research poster at the Council of Undergraduate Research’s fifth annual “Undergraduate Posters on Capitol Hill.” Their study focused on the topic of aluminum toxicity and its association with several bone diseases and was done under the direction of Dr. Conrad Firling.

Cammie Wendling (B.S. ’94) is a May, 2001 graduate of the University of Minnesota Medical School and will be starting an Emergency Medicine residency in Detroit. Cammie’s family, including three young sons, now live in the Twin Cities.

David Haugen (B.S. ’96) graduated last May from Marquette University School of Dentistry and is currently in an Advanced Education in General Dentistry residency for the U.S. Navy. He is married with two children, and stationed at Great Lakes Naval Base.

Michael Tupy (B.S. ’96) worked at Voyageur’s National Park as a technician for a short time, then returned to UMD and obtained an M.S. in Industrial Safety in 1998. Mike enjoys the challenges of his job as an industrial hygienist for Hennepin County. Mike’s wife Beth is also a UMD graduate (class of ’97, Special Education) and they have a 15 month old daughter.

John Houle (B.S. ’96) is a graduate of the Medical College of Wisconsin, Milwaukee, and currently in an internship/residency in plastic surgery at the University of Southern Illinois in Springfield.

Jim Gangl (M.S. ’98) works for the St. Louis County department of Public Health as an Environmental Health Specialist. His current work uses Geographic Information System (GIS) to evaluate the performance of individual sewage treatment systems in different watersheds in the county. Jim’s wife, Vivian, works for the Duluth Public Library.

Amber Ulseth (B.S. ’99) enrolled in August of 2000 as a graduate student in aquatic ecology at the University of North Carolina, Greensboro.

Kay Rezanka (M.S. ’99) has a new job as St. Louis River – River Watch Coordinator for Fond du Lac Tribal and Community College in Cloquet. Kay oversees the training of high school students and teachers in stream sampling techniques and data analysis for the secondary school monitoring programs in northeastern Minnesota. Kay joins other UMD Biology Alumni Paul Mickelson (B.S. ’86 and M.S. ’89), Andy Wold (M.S. ’98), new Director of the Environmental Institute and Mick Gillespie (M.S. 2000), Biology Instructor, at Fond du Lac College.

Jean Mengelkoch (M.S. ’00) recently began working for the Colorado State University Center for Ecological Management of Military Lands. She is based at the US Army Corps of Engineers Research and Development Center in Champaign, IL. Her duties are to develop and coordinate research on the Indiana bat, including habitat characterization, population estimation and validation of habitat suitability indices.

In the last 30 years, more than 200 graduates of UMD have served in the Peace Corps. Currently, 16 UMD graduates are currently serving as Peace Corps Volunteers. These include Biology graduates Michael Nelson (Science Teaching in South Africa), Jeffrey Rice (Science Teaching in Kazakhstan) and Jessica Wubbels (B.S. ’99; Health Extension in Zambia).

Carolyn Scholl (M.S. ’00) and her husband are the parents of twins Michael James and Megan Elaine born in September, 2000. Congratulations to Dennis and Carolyn!

Contact us at:
http://www.d.umn.edu/biology/
A ONCE IN A LIFETIME OPPORTUNITY -- 

Announcing the new UMD Laboratory Sciences Building 

by Randall E.Hicks, Department of Biology Head

Yes, it is going to happen; a new building for chemical and biological studies at UMD! The Department of Biology will be permanently allocated new space to meet its instructional and research missions for the first time since the present Life Sciences Building was constructed in 1967. The Life Sciences Building was completed at a time when there were fewer faculty members and when fewer students and investigators conducted research in our department. We have needed additional space for many years because the department's activities have long since outgrown the space available in this building. Two years ago, Chancellor Martin proposed constructing a new Laboratory Sciences Building when it was recognized that both the Biology and Chemistry Departments needed additional space as well as new space to support their growing programs in cell and molecular biology. This request for an additional science building on the UMD campus is now the top-rated building request for the entire University of Minnesota System. Governor Ventura's proposed budget has identified funds this year to complete the final blueprints for this new $33 million dollar "state-of-the-art" science building. Final plans will be finished in 2002 and construction will start as soon as building funds are obtained from the legislature. Construction could start as soon as August 2002, which means the new building would be ready to occupy in late 2004.

You will be hearing more about this exciting UMD building project during the next few years. Fortunately, twenty-five percent of the cost to construct this new science building has been given by the Swenson Family Foundation. There is still an opportunity available for alumni and friends like you to help. UMD is naming special rooms and laboratories and other parts of this new building. Wouldn't it be wonderful to have a classroom or a seminar room named by your company, or have a student lounge or computer lab named in honor of a relative, friend or former professor you treasure? If you or your company are interested, then it is not too early to consider this opportunity. Please feel free to discuss your interest and ideas with me (218-726-7263, rhicks@d.umn.edu) or Bill Wade (218-726-8831) in the UMD Development Office. It may be a once in a lifetime opportunity!

Additional Opportunities to Support UMD Biology Students

The contributions of friends and alumni continue to be an important resource as we grow and improve. This year, we are thankful for receiving many gifts from alumni and friends, which are the core of our development program (please see our list of donors). No matter how small a gift is, there are special areas in our department where your gift will make an important difference.

One of our development goals has been to raise $10,000 to endow a Biology Student Awards Fund. Obtaining funds from the university to develop student awards is nearly impossible after the other needs within the university are met. This fund will help us develop new awards in the future but also permanently provide funding for small gifts to accompany our existing annual awards such as the Outstanding First Year Student and the Outstanding Graduate Teaching Assistant awards. The endowment has grown during the past year but our goal is still not met. The Biology Department needs your help. It's faculty members have already contributed almost 25% of the funds needed to meet our goal because they understand the importance of recognizing students at all stages of their education. Join us in reaching this goal and earmark your gift for the “Biology Student Awards Fund”.

Our second goal is to fund a larger endowment over the next five years to support undergraduate and graduate research projects. We hope to raise $100,000 to endow support for the growing number of undergraduate and graduate students who pursue research projects within the Biology Department.

The number of undergraduate biology students participating in research projects has grown steadily; a 135% increase during the past decade.

Students and faculty alike feel a research experience is an important aspect of education and training at UMD. This special endowment will help us support the growing number of students who wish to participate in biological research.

Our third goal is to endow annual support for the student clubs associated with the Department of Biology (i.e., Biology Club, Pre-Vet Club, Pre-Dentistry Club, Pre-Optometry Club). The emeritus faculty, many of whom are your past professors, are very excited about these fundraising goals. Again, if you, your family, or your company would like to help us reach our goals, then please contact me (218-726-7263; rhicks@d.umn.edu) to discuss your gift further.

How Can Your Gift Make a Difference?

For: You Can:

$25,000 Permanently endow a student scholar ship or research award named for a loved one or to honor a favorite professor

$1,000 Help complete our Biology Students Award Fund

$1,000 Help the Biology Department reach its endowment goal for student research

$100 Support student clubs in the Biology Department

$100 Contribute to the unrestricted Biology Development Fund

All gifts to UMD are tax deductible and the UMD Development Office will be happy to provide the documentation you need. Many corporations and organizations match individual donations to educational institutions, so I urge you to inquire if your employer will match your contribution. Please send your gifts to the UMD Development Office (315 Darland Administration Building, UMD, Duluth, MN 55812). We are extremely grateful for the continuing generosity of our alumni and friends.