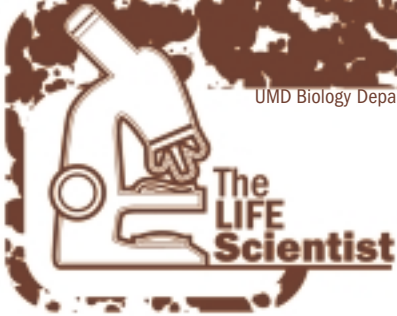


winter 2000

UMD Biology Department News



A TRIBUTE TO THERON O. "TED" ODLAUG
by Linda Holmstrand

Dr. Theron O. Odlaug passed away at the age of 88 years on January 31, 2000, at Lakeshore Lutheran Home in Duluth, following several years of failing health. He leaves his wife of 62 years, Lucille, a daughter Margaret of Minneapolis and a son Michael and family of Bellevue, Washington. Besides immediate family, Dr. Odlaug is also survived by a "family" of close friends, former colleagues and hundreds of students. One of his former students was influenced to the extent that he or she

anonymously donated \$50,000 to endow a scholarship in Ted Odlaug's name. That gift will be a lasting memorial to a very fine teacher and scholar.

"The family of Theron O. Odlaug is pleased, proud and happy that our husband and father has been so honored for his teaching, counseling and dedication to his work. Our thanks to the contributor of this wonderful scholarship gift." Lucille Odlaug

Dr. Odlaug retired from the Biology department in 1978, closing a long and dedicated career that began in 1945 as a professor of zoology at the former Duluth State Teachers College, later to become the Duluth campus of the University of Minnesota. His service to UMD included 24 years as the head of the Department of Biology. His doctorate was earned at New York University. Before joining the faculty here, Dr. Odlaug taught in colleges in New York, Montana and Nebraska. At UMD he spent more than three decades in

(Continued on page 2...)

Theron O. "Ted" Odlaug
1911 – 2000



(Continued from front page)

the classroom, teaching courses in Animal Parasitology, Helminthology, Human Anatomy, Comparative Anatomy of Vertebrates, Oceanography, and Water Quality Investigative and Research Techniques. In 1971 he was listed in "Outstanding Educators in America" based on his civic and professional achievements.

Professor Odlaug's research on Lake Superior was a collaborative effort with the university's twin cities-based School of Public Health. Beginning in the mid-50's, he was the co-director of a program that provided training and research experience in aquatic biology for teachers, graduate students and public health personnel. In the 50's and 60's, his summers were spent at the UMD Limnological Research Center on London Road (near the current EPA facility). In 1966, the program received funding to purchase a CPR (continuous plankton recorder), a novel (at that time) sampling device towed behind an ore carrier. The samples collected provided a baseline study of plankton components in transects of Lake Superior. In addition to his limnological research, Dr. Odlaug also published on the topic of parasite life histories, and authored a laboratory manual on the anatomy of the fetal pig, a work that is now in its eleventh edition.

The previous three paragraphs were easy to write — they tell about some of the recorded facts of Ted Odlaug's life and work. But in this article, I also want to convey some of the unrecorded, personal characteristics of this good man. I sought the help of some of the Biology Professors Emeritus, a group of retired faculty and former colleagues. Jack Hofslund, Blanchard Krogstad, John Carlson and Paul Monson remember the pioneer years when the department was small and close-knit, a bunch of "green, young PhDs". Facilities were poor, pay

was subpar, and there was only one telephone for the entire science division. There were no laboratory assistants and only a part-time secretary. Through these years, Ted Odlaug had the respect and loyalty of his faculty and was appointed and reappointed as department head for more than 20 years. And no tenured faculty member ever left for greener pastures.

I have heard certain words over and over. (Ted was).... conservative, kind, polite, gentle, dedicated, patient, comfortable, helpful. On the topic of his leadership, Helen Hanten said that he "never dealt with a situation and made it worse." In fact he was a quiet but skillful communicator who made the management of the department seem deceptively simple. Many of the stories I heard were humorous. Everyone I talked to remembered that when dining out, Ted always ordered Salisbury steak, well done — burnt by most people's standards — remember that he was a parasitologist! Ted also had a great sense of humor, but was a notoriously poor storyteller — somehow he always blew the punch line. He often put himself in the position where he was the brunt of jokes and encounters, but he always could laugh at himself and have a good time at his own expense.

Yes, there are a lot of unwritten memories and stories to be shared about Ted Odlaug. I am proud to say that I knew him for more than forty years — first as a student and advisee, later as a colleague in the department. He was an inspirational teacher, a caring and considerate boss and a fine, upstanding Christian person. Along with others in the Biology Department, I want to say a heartfelt "thank you" to the person who endowed the Odlaug Memorial Scholarship Fund. I think I know how you feel about Dr. Odlaug.

FROM THE DEPARTMENT HEAD

by Randall E. Hicks

As I complete my second year as department head, I am amazed at the positive changes in our department and very appreciative of our alumni's generosity. My desire is to see us grow while retaining our strong programs in ecological and cellular biology. Our departmental strength in research continues to feed undergraduate as well as graduate research opportunities. Last year, I mentioned that many changes were taking place and that several outstanding opportunities awaited us. This was not understated because many opportunities became reality and we were blessed with several pleasant surprises.

Dr. Mel Whiteside retired this year but we were fortunate to search for five new faculty members. These searches indicate a renewed period of growth for our department. In January, we welcomed Dr. Allen Mensinger aboard. Allen

studies the neurophysiology of fish. Some of his toadfish have even ridden into space aboard the space shuttle! This summer, Dr. Donn Branstrator will join our department. Donn was an Assistant Professor at DePaul in Chicago. We were fortunate to entice him away from that university to work as a plankton ecologist at UMD. Just recently, Dr. Matt Andrews agreed to join our faculty as a full professor of environmental cell biology. Matt comes to us from North Carolina State University in Raleigh. We look forward to the exciting research program he will transfer to UMD and his leadership as we continue to develop cell and molecular biology on the UMD campus. Finally, we are concluding our faculty search for an insect ecologist and will soon be conducting interviews to hire a new fisheries biologist. You will learn more about these new faculty members in the coming years.

WHAT A RETIREMENT!

by Deb Shubat

Professor Melbourne Whiteside officially retired as of January 2000, and is off to start the next phase of his life adventure. His official home is now his very seaworthy sailing vessel *Itasca*, and at the time of this writing, he is cruising with Gildi through the South Pacific.

Mel received his B.A. in Biology in 1962 from Willamette University, his M.S. in Zoology in 1964 from Arizona State University and his Ph.D. in 1968 from Indiana University. He came to UMD from the University of Tennessee in 1985 to take the position of Biology Department Head. His goals at that time were to be situated closer to his research on Lake Itasca, to promote research on Lake Superior, and to develop curriculum for undergraduate and graduate education. Here at

UMD, Mel directed a talented group of graduate students. They include Roland Sigurdson, Ann Sigford, Connie Schwegman, Jeff Schuldt, Jay Sandal, Michelle Kuns, and Rebecca Forman.

Researching and writing papers on zooplankton ecology took up much of Mel's time at UMD. Two of his recent publications include: "*Quantitative*



Melbourne Whiteside

sampling techniques for age-0 fish from diverse lake habitats", and "*Spatial distributions of zooplankton during coastal upwelling in western Lake Superior*."

During his tenure at UMD he received more than five hundred thousand dollars

in grants and contracts from NSF, EPA and others. He was frequently an invited presenter at professional meetings and he was also a reviewer for the *Canadian Journal of Aquatic Sciences*, *Hydrobiologia* and *Archiv Fur Hydrobiologie*.

Professor Whiteside taught Ecology Laboratory, Plankton Ecology, Biology and Society and his most sought after class, Coral Reef Studies. The "Coral" class included a field trip to the Florida Keys where the students would stay at a field station on Pigeon Key and snorkel in the actual reefs they had been studying all quarter.

Mel spent time on a sabbatical in Denmark doing research and writing, and, of course had

to sail there himself on his former boat, the *Niña*. We hear from Mike King and Todd Obey (Physics) who helped as crew on the boat that Mel is a compulsive sail "tweaker". The word is that one should never eat chicken chow mein on a boat with Mel. Todd and Mike believe their stomach discomfort was due to food poisoning from those cheap dented cans, while Mel claims they just got sea sick.

Things aren't quite the same around the Biology Department without Mel and his irreverent humor. We wish him well in his new life, and hope he'll make it back to Duluth once in a while to update us on his travels.

We successfully navigated the transition to semesters due in large part to the leadership of Linda Holmstrand, one of our Associate Heads, our Executive Secretary Ruth Hemming, and our past Curriculum Committee Chair, Dr. Conrad Firling. Our Biology Graduate Program remains strong and vibrant under the watchful eye of Dr. David Schimpf. This year, bachelor's and master's degree graduates from our department have moved on to exciting opportunities ranging from a government fellowship in Washington, DC, to research positions in Florida, to further postgraduate or professional training throughout our country.

We are meeting our goal to make the freshman experience in biology the most fascinating time a student will spend at UMD. We are completing our first year of instructing Freshman Seminars.

They have been a rousing success. As one example, students in John Pastor's Biological Illustration course had their work displayed in the Tweed Museum of Art. Next year we will expand to five Freshman Seminar classes and the university has given our department a tenure-track faculty position to help facilitate this expansion.

As amazing as this year has been, there are still opportunities on our horizon. We want to enhance instruction and research opportunities in cell and molecular biology as well as hire a molecular geneticist next year. This will happen if our joint proposal with the Chemistry Department to the Howard Hughes Medical Institute is successful. During the past year, a Chemistry alumnus donated at least one fourth of the construction costs to build the new

Laboratory Sciences Building. We look forward to obtaining the remaining construction funds from the legislature and seeing construction of this building start within a few years.

Finally, gifts of support from our alumni and friends have been overwhelming (the pleasant surprise I talked about earlier). Donations to scholarship funds and endowments in our department were at a record high this year. There is so much information and thanks to convey that I just cannot do it justice here. Please look for the other articles in our newsletter to understand the breadth of what has happened during the past year and how appreciative we are of our friends and alumni.

Yes, it has been a truly amazing year. We continue to be a department that emphasizes

undergraduate education. I see our program as a positive blend of high-quality undergraduate instruction, significant research programs, strong graduate training, and outreach of biological knowledge and understanding. Our intent is to retain the best from the past as we strive to develop new areas in the future. I am thankful for the outstanding faculty and staff in our department. We are excited about the directions our department is taking and hope you are as well. Please visit our web page (<http://d.umn.edu/biology>) and consider visiting us when you are in Duluth.

NEW FACULTY

Last September, Carl Richards concurrently joined the Biology Department as a professor and accepted the position of director for the Minnesota Sea Grant College Program. Dr. Richards, an aquatic ecologist, formerly was a senior research associate with UMD's NRRI. He has been involved in studies on Eurasian ruffe ecology and also site selection for the reintroduction of coaster brook trout into Lake Superior streams. Other research projects involve landscape influences on Arctic lakes, ecology of midwestern streams and the effect of sediment contaminants on benthic communities. Dr. Richards will participate in the teaching of several biology courses and in the direction of graduate students. We welcome his experience and expertise.



Carl Richards

Allen "Wally" Mensinger joined us in January, 2000, as the department's vertebrate physiologist. He leaves the position of research instructor in otolaryngology at the Washington University School of Medicine in St. Louis. Al's research is focused on teleost (toadfish) sensory physiology — some of his research specimens have been aboard NASA's space shuttle! He has recently been appointed Adjunct Scientist at Marine Biological Laboratory at Woods Hole, MA, where he will be involved with research and teaching this summer. Besides initiating the setup of his research program at UMD, Dr.



Allen Mensinger

Mensinger has also participated in the teaching of introductory biology this semester. We are happy to have Allen and his wife Robin, and their two children — Matt, age 6 and Megan, age 2, here in Duluth.

NEW STAFF MEMBERS

by Ruth Hemming

This past year the Biology Department has had the opportunity to welcome three new staff members: Betty Myshack, Narayanan Rajendran, and Sharon Eck.

Betty Myshack began work on April 1, 1999, as our Accounts Specialist. Betty is a native of Duluth and an alumnus of UMD, receiving a B.B.A. degree. She most recently worked for St. Louis County as an accountant in Virginia, Minnesota. Betty and her husband, George, have two daughters, Heather and Jessica; and two grandchildren, Alex and Quinn. Family activities consume most of Betty's free time, but she finds time to run (she's in training with Heather for Grandma's half-marathon and the Jim McIntire half-marathon in Proctor). She collects "Beanie Babies" and just recently began to do oil painting as a new hobby.



Betty Myshack

Narayanan Rajendran, "Rajen", joined the Biology Department in June of 1999 as a Laboratory Services Coordinator. Rajen originates from Calicut, India and received his B.S., M.S. and Ph.D. degrees from the University of Rockfort, India. Rajen has conducted post-doctoral research in microbial biotechnology and molecular biology, has short term industrial training and also worked as an Assistant Professor of Biotechnology at Ann University, India. His most recent position was at Michigan State University where he was a post-doctoral research associate, identifying molecular mechanisms and the genes responsible for the biodegradation of carbon tetrachloride by *Pseudomonas*. He has 15 papers published in peer-reviewed journals. Rajen and his wife, Preetha, have a three year old son, Sibi. Rajen's special interests include painting, drawing, writing, photography, and creating net-working ideas.



Narayanan Rajendran

Sharon Eck officially began work in August of 1999 our three-quarter time Office Assistant/Receptionist. This is the first time the office has been supported by three staff members. With the department growth over the past years, this position was a welcome addition and has improved the office workflow. Sharon is a native of Duluth. She most recently worked for Orthopedic Associates of Duluth and worked as a Temporary Office Support Staff in Biology from February until August. Sharon and her husband David have a twelve year old daughter, Alex; a yellow lab, Sandy; and a bunny, Midnight. Sharon began taking classes at UMD fall semester; her goals are to receive a degree in

Biology and conduct research. Sharon says, "It's a unique experience to be starting school again after 20 years and Alex thinks it's neat to give Mom a hand with her homework". Sharon enjoys skiing, camping and canoeing with her family.



Sharon Eck

Betty, Rajen, and Sharon are welcome additions to the Biology Department staff. They have all been doing a great job in learning the ropes of their respective jobs and have contributed to a successful and productive academic year.

New Arrivals... Congratulations to...

QinQin Liu (faculty) and David Schuler on the birth of their son Louis Liu Schuler, born November 3, 1999 in Folsom City, California.

Anne Gingery (graduate student) and Rich Narum on the arrival of baby boy Anders Knute Gingery Narum in March, 2000.

Randy (lab coordinator) and Paula Hedin on the birth of their daughter Sydney Helen Hedin, born March 18, 2000. She joins her sister, Dayle, who will be three in September.

Jack R. Hargis Memorial Lecture Series

David Schindler, University of Alberta Department of Biological Sciences and Killiam Professor of Ecology, spoke on the "Cumulative effects of acid precipitation, climate change, and stratospheric ozone depletion on biodiversity and ecosystem functions in boreal lakes". The seminar was followed by a reception in the Griggs Center. It was sponsored by the Biology Department in memory of Dr. Jack Hargis.

Biotechnology Initiative

A new program in plant biotechnology is the focus of a cooperative program between NRRI and the College of Science and Engineering. Directed by Co-Principal Investigators Arun Goyal of the Biology Department and Neil Nelson of NRRI, the project will use recombinant DNA and molecular biology techniques to create transgenic hybrid poplars that express industrial enzymes and pharmaceuticals. The long term objectives are to develop and produce recombinant proteins as a new "molecular farming" industry in northern Minnesota.

Dr. Arun Goyal has been awarded a single semester sabbatical for fall semester, 2000.

Dr. John Pastor was selected as the first recipient of the Chancellor's Award for Distinguished Research. Dr. Pastor is also a Senior Research Associate at NRRI.

As winner of the award, his research was judged to be of the highest quality and of broad interest to the UMD community. Dr. Pastor's seminar title "Beauty and Aesthetics in Mathematical Ecology and Art" illustrated the connection between mathematical modeling and the natural world of the artist. The award consisted of a cash award or a travel expense grant, an honorary statuette "The Bulldog" and inscription of his name on a plaque in the Campus Center.

Raj Karim was one of four recipients of the John Tate Award for Excellence in Undergraduate Advising, a University of Minnesota System award. He was recognized as having the ability to recognize and cultivate potential in his advisees. In winning the award, Dr. Karim..."serves as a mentor, invites students to participate in his research, encourages students to excel and makes students feel welcome in his office, laboratory and classroom." He advises nearly fifty students in the Biology Department, most of them in PreVeterinary Medicine.

Three Biology Faculty members, **Virginia Borden**, **Arun Goyal** and **Lyle Shannon** were chosen to participate in the UMD Faculty Tech Camp this year. The camp includes a week of workshops and hands-on activities that enable faculty to design and teach courses using technological tools. The incentives are a laptop computer, supporting software and individual assistance in completing a project.

It seems like only yesterday, but actually it was five years ago, that I wrote an article for this newsletter about the retirement of Professor **George Ahlgren**. Several weeks ago, I arranged to meet George and Elaine Ahlgren, who still live in Duluth, for coffee and an update on their activities. We spent an enjoyable, leisurely hour reminiscing and looking at pictures.

Dr. Ahlgren retired from the UMD Biology Department in 1995 after nearly thirty years of service. Alumni probably will remember him as their professor for General (plant) Biology, Plant Physiology and a required core course in Cell Biology, which he taught for more than twenty years. He was a popular, easy-going teacher, who always had an open door, especially for those who could converse in Finnish. Besides a heavy teaching load, he also researched shattering of wild rice grains and dormancy in *Zizania aquatica* and directed the work of six master's thesis graduate students.

As I reread the '95 article, I noted that the Ahlgrens at that time had several goals for their retirement — pursuing their shared interest in their Finnish heritage, spending time with family and traveling. It seems they have done all three! They are both members of the Finnish Music Group “Jarvenpaa Singers” — translated Lakehead Singers — that perform often in the Duluth area. In July they will travel with the group to Toronto for a “Grand Finn Fest”, a joint musical celebration of Canadians and Americans. They also still occasionally dance with a Finnish folk dance group, in full costume, for Finnish activities in nursing homes and schools. Besides local travels, they have visited Japan and Finland.

The five Ahlgren children all graduated from UMD and are establishing lives of their own.

Daughter Valerie is now a stay-at-home mom after working for a number of years as a chemist for Minnesota Power. She and her husband Darrell have two children. Erik and his wife Lisa, also a UMD graduate, live in Fergus Falls with their two boys. Erik is the president of Shoremaster Industries which deals in docks, boat lifts and other marine supplies. Karl and his wife Yuki, whom he met and married in Japan, live in Long Prairie with their son. Karl teaches English as a Second Language for children of Mexican immigrants. Sara, the second daughter, is a manager for a service center in Plymouth, MN. She and her husband Terry Bogie, live in St. Paul. Anna, the youngest Ahlgren, is a high school English teacher in south St. Paul. She will be married in September to Mike Ossana and they plan to move to Des Moines, Iowa. No doubt the Ahlgren vehicle will put on many miles as George and Elaine travel to see their children and grandchildren.

Finally, a few comments about the accompanying picture. It shows George relaxing in the living room of his cabin on Linwood Lake, north of Duluth. One of his retirement goals was to build this cabin. Now it's done and it's time to relax! Colleagues and friends in the Biology Department wish George and Elaine a continued happy and healthy retirement. This is how it was meant to be.



George Ahlgren relaxes at his cabin

CURRENT FACULTY GRANTS

A. Goyal (Co-PI) with Neil Nelson initiated a major research program on Plant Biotechnology entitled “Production of high value macromolecules in hybrid poplar”. NRRI/MinnTech. April 1999–June 2002; \$345,000.

A. Goyal (Co-PI) with Neil Nelson and Chris Edwardson. Forest Products Innovation and Implementation. USDA-CSREES; June 1999–June 2001; \$255,396.

G. Sabel, J. Anderson, D. Gustafson, B. McCarthy, R. Axler, **R. Hicks** (Co-PI), J. Crosby, T. Bovee, WLSSD, and Minnesota OST Contractors Association. “On-Site Sewage Treatment Alternatives: Pathogen Removal/Technology Transfer”. Legislative Commission on Minnesota Resources; July 1997–June 1999; \$500,000; ~\$75,000.

R. P. Axler, **R. E. Hicks** (Co-PI), B. I. McCarthy, “Pathogen and Nutrient Removal by Constructed Wetlands for Treatment of Single Home and Small Community Wastewater Flows”. Competitive Grants Program, Minnesota Sea Grant College Program; February 1, 1998–January 31, 2000; \$80,400; ~\$20,000.

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. 1999–present. \$40,000.

G.J. Niemi. Distribution of Canada lynx in the upper midwestern United States. Joint funding from USDA Forest Service, Minnesota Department of Natural Resources, and U.S. Fish and Wildlife Service. 1999–present. \$35,000.

G.J. Niemi. Boulder Lake Management Area—Environmental Education and Research Program (Partnership program between Center for Water and the Environment, NRRI; Minnesota Power; Minnesota Department of Natural Resources; and St. Louis County. 1994–present. \$59,500.

G.J. Niemi. Monitoring bird populations in Minnesota's national forests. North Central Forest Experiment Station, Chippewa National Forest, Superior National Forest, USDA Forest Service and US Fish and Wildlife Service. 1991–present. \$198,360.

G.J. Niemi. Effects of changes in the forest ecosystem on the biodiversity of Minnesota's northern forest birds. Minnesota Legislative Commission on Minnesota Resources. 1991–present. \$1,788,000.

G. Sabel, J. Anderson, D. Gustafson, B. McCarthy, R. Axler, **R.E. Hicks** (Co-PI), J. Crosby, T. Bovee, P. Weidman, and Minnesota OST Contractors Association. “On-Site Sewage Treatment Alternatives: Performance, Outreach & Demonstration”. Legislative Commission on Minnesota Resources; July 1999–June 2001; \$550,000; ~\$75,000.

R. E. Hicks (PI), "Survival and Virulence of Pathogenic Bacteria within Microbial Communities Attached to Suspended Particles in a Freshwater Estuary". Minnesota Sea Grant College Program; March 1, 1999–January 31, 2001. \$48,210.

L. Shannon (PI), **L. Holmstrand**, **V. Borden**, **A. Goyal**, **R. Karim** and **M.J. Oursler**. Chancellor's Small Grant to Develop and Implement Computer-based Teaching Materials for General Biology. FY99 \$5,250.

L. Shannon (PI), **L. Holmstrand** and **K. Rezanka**. Development of a Portable Network of Computers for Use in Biology Core Courses. CSE Technology Fee Funds. FY99, \$29,300.

M. R. Karim (Co-PI) Mechanisms of Antiviral Activity by Betulin and its Analogs. Academic Health Center, University of Minnesota, July 1, 1999–June 30, 2001, \$200,000.

M.R. Karim (Co-PI) Investigation of Betulin, Allobetulin and Analogs therapy to treat Herpes Virus and Fungal infections, Minnesota Tehnology Initiatives, Continuation Feb.1,1998–July 31, 1999, 48,000.

M.R. Karim (Co-PI) Chemical Extractives from Birch Bark–Potlatch and Minnesota Power, Feb 1, 1999–July 1, 2000, \$50,000.

Co-PIs **A.R. Klemer**, **M. Mageau**, **M. Wackernagel**, **D. Yount** and **I. Harvie**. "Reducing Duluth's Ecological Footprint" State of Minnesota Environmental Assistance Grant. 6/1/99–8/31/00, \$24,500.

A.F. Mensinger (PI), "Chronic Neural Recording via acoustical telemetry from free-swimming fish," Grant-in-Aid of Research, Artistry and Scholarship; January 2000 to January 2001; \$25,000.

M.J. Oursler (PI) "Breast Cancer Stimulation of Osteolysis"; Department of the Army: October 1, 1997–September 30, 2000 \$ 286,509.

M.J. Oursler (PI) "The role of src in estrogen's protective effects on cardiovascular disease and osteoporosis," American Heart Association Beginning Grant in Aid, April 1, 1998–March 31, 2000, \$59,405.

M.J. Oursler (PI) "Metastatic breast cancer stimulation of osteolysis: the role of osteoclast inhibitory factor and osteoclast differentiation factor," Whiteside Institute for Clinical Research, January 1, 1999–December 31, 1999; \$5,000.

M.J. Oursler (PI) "Mechanisms of Transforming Growth Factor Beta Regulation of Tumor Progression in Metastatic Cancer". Department of the Army: October 1, 2000–September 30, 2003 \$322,754.

M. J. Oursler (PI) "Target Cells for TGF- β Regulation of the Osteoclast Phenotype," Minnesota Medical Foundation: March 1, 2000–February 28,2001 \$12,000.

J. Pastor (PI), **Y. Cohen**, "Moose foraging strategy, energetics, and ecosystem processes in boreal landscapes," National Science Foundation, 1994–1999 \$765,000.

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.

S. Bridgham (PI), **J. Pastor**, and **J. Chen**, Carbon and energy flow and plant community response to climate change in peatlands, National Science Foundation, 1997–2001, \$1,380,889.

J. Pastor (PI), **Y. Cohen**, **R. Moen**, and **B. Dewey**. Moose population cycles, ecosystem properties, and landscape patterns on Isle Royale, National Science Foundation, 1998–2003, \$300,000.

J. Pastor (PI), **P. Wolter**, Mapping and modelling forest change in a boreal landscape, NASA, 2000–2003, \$349,841.

C. Richards (PI) Legislative Commission on Minnesota Resources. Predictive Modeling for the Miller Creek Watershed. 1997–2000.

C. Richards (PI) U.S. Environmental Protection Agency. STAR Grant Program Development and Evaluation of Multi-scale Mechanistic Indicators of Regional Landscapes. 1997–2000. \$925,000.

C. Richards (Co-PI) U.S. Environmental Protection Agency. STAR Grant Program. Environmental Factors that Influence Amphibian Community Structure and Health. 1997–2000. \$498,338.

C. Richards (Co-PI) with **John Hobie** and 12 others. National Science Foundation. Key Connections in Arctic Aquatic Landscapes. 1997–2000. \$2,989,784.

C. Richards (Co-PI). Minnesota Department of Natural Resources. 1997–2000. \$529,620. Lake Superior Land Use Decision Support System.

C. Richards (Co-PI) U.S. EPA Office of Environmental Justice. Assessing and Communicating Risk: A Partnership to Evaluate a Superfund Site on Leech Lake Tribal Lands. 1997–2000. \$249,781.

C. Richards (Co-PI) Minnesota Sea Grant Program. Watershed Effects on Stream Productivity and Water Quality Discharge in Lake Superior Tributary Streams. 1996–2000. \$224,591.

C. Richards (PI). Minnesota Sea Grant Program. Evaluating Potential Reintroduction Sites for Coaster Brook Trout within the Lake Superior Basin. 1998–2001.

L. J. Shannon, Co-PI and **K. Yin**. Acoustical mapping of Lake Superior Zooplankton. Sea Grant FY98 (extended through 2000) \$65,000.

FACULTY PUBLICATIONS IN THE LAST YEAR

Aluminum toxicity perturbs long bone calcification in the embryonic chick. **C.E. Firling**, T.A. Hill, and A.R. Severson. *Archives of Toxicology*, Vol. 73 issue 7 (1999), pp. 359–366

Hicks, R.E., and D.A. Pascoe. 2000. A comparison of cyanobacterial dominance within the picoplankton of the North American Great Lakes estimated by 16S rRNA-based hybridizations and direct cell counts. pp. —In *Exploring the Great Lakes of the world: Food-web dynamics, health, & integrity*, (Munawar, M. and R. Becky, eds.). [book]

The Effect of Betulin in the Formation of Cellular and Viral Proteins of Cells in Response to *Herpes simplex Virus Type 2 (HSV-2)* Infections. Jonathon Edward Delf, **M. Reza-ul Karim** and Robert M. Carlson. *Proceedings — NCUR 1999*, pp. 1512–1516

A.F. Mensinger, D.J. Anderson, C.J. Buchko, M.A. Johnson, D.C. Martin, R. B. Silver and S. M. Highstein. “Chronic recording of regenerating VIIIth nerve axons with a sieve electrode,” *Journal of Neurophysiology*, vol. 83, pp. 611–615, January 2000.

A.F. Mensinger and S.M. Highstein. “Regeneration of the horizontal semicircular canal nerve in the toadfish *Opsanus tau*,” *Journal of Comparative Neurology*, vol. 410, pp. 653–676. April 1999.

A.F. Mensinger and M.K. Powers. “Visual function in the regenerating teleost retina following cytotoxic lesioning,” *Visual Neuroscience*, vol. 16, pp. 1–11. March 1999.

Price, N.N. and **A.F. Mensinger**, “Predator-prey interactions of juvenile toadfish, *Opsanus tau*,” *Biological Bulletin*, vol. 197, 246–247. October, 1999.

Tang, K.Q., N.N. Price, M. D. O’Neill, **A.F. Mensinger**, and R. T. Hanlon. 1999. Temperature effects on first-year growth of cultured oyster toadfish, *Opsanus tau*,” *Biological Bulletin*, vol. 197, pp. 245–246. October, 1999.

Hershey, A.E., **L. Shannon**, **G.J. Niemi**, A.R. Lima, and R.R. Regal. Prairie wetlands of south-central Minnesota: effects of drought on invertebrate communities. Pages 515–541 in D. Batzer, R. B. Rader, and S.A. Wissinger (Eds), *Invertebrates in Freshwater Wetlands of North America: Ecology and Management*. John Wiley and Sons Inc. 1999.

Hawrot, R.Y., J.M. Hanowski, A.R. Lima, **G.J. Niemi**, and L.Pfannmuller. Bird population trends in Minnesota and northwestern Wisconsin forests, 1991–1997. *The Loon* 70:130–137. 1999.

Niemi, G.J., A.E. Hershey, **L. Shannon**, J.M.Hanowski, A. Lima, R.P.Axler, and R.R.Regal. Ecological effects of mosquito control on zooplankton, insects, and birds. *Environmental Toxicology and Chemistry* 18: 549–559. 1999. L Pederson, B. Winding.

N.T. Foged, T.C. Spelsberg, and **M.J. Oursler**, “Identification of breast cancer cell line-derived paracrine factors that stimulate osteoclast activity,” *Cancer Research*, vol.59, pp. 5840–5855 November 1999

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GRADUATE STUDENT PROFILES

by Megan Kingsley

Accustomed to using automated cameras to photograph ground nest predation, **Chris Burdett's** thesis project, "Effects of Forest Type and Fragmentation on the Predation Rates of Artificial Ground Nests" is nearing completion. With three years experience teaching and coordinating general biology courses under his belt and plans to finish a Ph.D. program, Chris is graduating this spring. He will manage a Canadian Lynx monitoring program this summer. Chris, a native of Pittsburg, PA, is married, and enjoys hiking and birding.

Holding a bachelor degree in biochemistry/molecular biology from Marquette University, this Wausau, WI, native is working with advisor Randall Hicks on the distribution of archaeal nucleic acids in the large lakes of three continents. A teaching assistant this year for General Microbiology and Animal Diversity, **Brendan Keough** plans to finish his degree this summer. He presented some of his research last year at an ASLO conference in Santa Fe, NM and at the recent Sigma Xi poster session.

Christian Matson hails from Hingham, Massachusetts. He received his undergraduate degrees in biology and chemistry from Northland College, Ashland, in 1996. He is currently studying biotechnology under Dr. Arun Goyal and plans to graduate in the spring of 2002. His experience as a TA for General Biology I is a step toward his ultimate goal of teaching. He came to UMD from working at Chicago's Abbott Labs for three years, and his family lives in the Boston area. With hunting, fishing, and canning as pastimes, Christian fits into the Minnesota crowd well.

A native of Menomonee Falls, WI, **Carolyn Scholl** earned her Biology degree at the University of Wisconsin-Oshkosh. She has been a teaching assistant in Biology & Society, Plant Biology and Plankton Ecology. Advised by Dr. Andrew Klemer, she is studying the effect of watershed populations on the water quality of small inland lakes. In the future, she would like to work as a watershed/water resource manager.

David VanderMeulen of Lowell, Michigan is studying peatland plant decomposition, litter quality, and how these factors relate to global warming. He has finished field collections and preliminary chemistry lab work for his thesis. This summer he will work with his advisor, Dr. John Pastor, on a peatland mesocosm project. After graduation in the fall of 2001, David is looking forward to a career in water resources in or near the Duluth area.

Studying the mechanism of tumor-driven bone loss, this northern Minnesota native received her bachelor's degree in Biology from UMD. **Aubie Shaw** will be defending her master's thesis work in June and then will take a pleasure trip into the BWCA before starting work on her PhD. Aubie was selected as the Biology Department's Outstanding Teaching Assistant for the '98-'99 academic year. (See the article and picture on page 10.)

Mark Prankus, an Indiana University graduate, enjoys spending time with his wife, Heather, as well as hiking, fishing, and playing with his two dogs. Studying stream ecology under Dr. Carl Richards, Mark's thesis project is "Macroinvertebrate Communities on Woody Debris in Streams of Varying Land Use and Geology". Mark has been a TA for several biology courses the last several years and was an RA in the summer of 1999. Having completed his fieldwork, he will spend this summer processing the invertebrate samples, and graduate in the fall of 2000. Eventually he may be involved in land and water resource management, and would like to research restoration techniques.

Other Biology Graduate students include: Simge Akbulut, Lisa Belmonte, Xu Chen, Mick Gillespie, Mary Karst, Jenny Kysely, Toni Lamkin, Brady Mattsson, Jean Mengelkoch, Frances Newton, Jim Noren, Mark Paulson, Matt Roforth, Michael Scott and Matt Thompson.

by Brendan Keough

The Sixteenth Annual Sigma Xi Poster Exhibition was held in the UMD Medical School atrium last February. Program Chair Arun Goyal arranged the exhibit and encouraged participation by many students and staff in the Department of Biology. Contributions from biology students, faculty, and staff totaled a third of all posters presented, many of which received awards or special recognition.

There were three presentations from Dr. Merry Jo Oursler's lab.

Aubie Shaw presented "TNF- α Stimulates Osteoclast Maturation and Inhibits Apoptosis of Mature Osteoclasts: A Model for Tumor Osteolysis."

Anne Gingery presented "TGF- β is a Survival Factor for TGF- β -Induced Osteoclasts," which earned one of the ten special recognition awards.

Lisa Lenertz presented "Osteoporosis: Granulocyte-Macrophage-Colony Stimulating Factor is identified as an Osteoclast Differentiation Inhibitor."

There were seven presentations from Dr. Arun Goyal's lab, which won the Highest Contribution Award from one laboratory. The contributions from this laboratory were excluded from award consideration due to possible conflict of interest.

Lionel Brounts presented "Phytoremediation of TCE using *Populus*" and "Novel Genes Induced by low CO₂ in *Dunaliella*."

Durba Ghoshal presented "Purification and characterization of an osmoregulatory isoform of DHAP-reductase from *Dunaliella tertiolecta*" and "DIC-Pump(s) in Unicellular Green Alga *Dunaliella*."

Matt Roforth presented "Steroidal Inhibition and Enhancement of *Herpes simplex Virus-1*."

John Thull presented "Effect of Elevated CO₂ on Proteins Located in the Chloroplast Envelope."

Kari Dresback presented "Phycoremediation."

There were four presentations from Dr. Raj Karim's lab. This laboratory won the special award for group effort.

Ben Koch presented "Antibacterial Activity of Structural Analogs of Betulin Against *Escherichia coli*, *Bacillus subtilis*, and Methicillin-Resistant *Staphylococcus aureus*."

Peter Keyel presented "In Vitro Effect Acyclovir, Betulin and Cyclodextrin Solutions with Different Ionic Strengths Against *Herpes Simplex Virus Infections*."

Venu Nayar presented "Effectiveness of Triterpenoid Compounds and Polyethyleneimine Derivatives of Betulin against Human Pathogenic *Candida* Species," which earned the special award for innovative presentation.

Xu Chen presented "Induction of Acquired Resistance in Bean Plants Against *Pythium ultimum* Fungal Infection by 9,10-epoxy, 18-hydroxy octadecanoic acid."

There was one presentation from Dr. Randall Hicks' lab.

Brendan Keough presented "Distribution of Archaeal Nucleic Acids in Picoplankton from Great Lakes of the World," which earned one of five best poster awards.

Congratulations to all presenters for their enthusiastic participation!

OUTSTANDING GRADUATE TEACHING AWARD

by Carrie Quast

Aubie Shaw is the recipient of the 1998–1999 Outstanding Graduate Teaching Assistant Award. This award is presented to the top teaching assistant in each department and is chosen by faculty members. Recipients receive a plaque and a monetary award.

Aubie has been a teaching assistant in a variety of classes at UMD including General Biology, Biology and Society, Genetics Lab and is currently assisting with the advanced Molecular Biology lab. She goes far beyond what is expected of her, staying late to allow students to finish experiments, and scheduling extra time for repeating lab procedures if necessary. Her supervising professors have found her to be reliable, conscientious and dedicated to helping other students.

Originally from Eveleth, Minnesota, Aubie had her start at UMD as an undergraduate, receiving her bachelor's degree in biology in 1998. She is currently completing her master's degree and anticipates completion in June. Aubie is working in Dr. Merry Jo Oursler's lab on the topic of metastatic breast cancer. Her thesis specifically

deals with the regulation of osteoclast differentiation by growth factors. During '98 and '99 she presented her work with poster exhibits for the American Society for Bone and Mineral Research.

Aubie's plan for the near future is to start her PhD work at UMD with Dr. Oursler, continuing her previous studies on breast cancer research. She someday hopes to be able to do research and to teach at a mid-size university. On behalf of the Biology Department, Aubie, congratulations on doing an excellent job in both teaching and research. Good luck in the future!



Aubie Shaw receives the Outstanding Graduate Teaching Assistant Award from Tim Holst, Associate Dean of CSE

COMMENCEMENT 1999

UMD's largest ever commencement ceremonies were held at the DECC on May 22, 1999. More than 1000 graduates marched in the ceremony along with nearly 100 faculty members. Featured speaker for the event was Berkeley Law Professor Emeritus John "Jack" Coons, who graduated from UMD in 1950. Chancellor Kathryn Martin awarded honorary Doctor of Law degrees to Dr. Coons, to former U of M Regent Erwin Goldfine and to community leader Beverly Goldfine. Biology students receiving degrees are listed to the right.

MASTER OF SCIENCE DEGREE (M.S.)

Gaea E. Crozier
Nicholas P. Danz
Sandy J. Fritzljar
James A. Gangl
Paula M. Hedin
Kurt W. Johnson
Scott P. McGovern
Kay M. Rezanka
Jay O. Sandal
Tamara A. Swanson
Joan T. Weyandt-Fulton
Kevin W. Wolfe

BACHELOR OF APPLIED SCIENCE DEGREE (B.A.S.)

Lisa A. Dannewitz
Chad D. Hollinbeck
Mark R. Johnson
John A. MacDonald
Patricia J. Nelson
John W. Rudolph
Tom C. Sjoberg
Mark T. Wiltermuth
Tyler S. Zimmerman

BACHELOR OF ARTS DEGREE (B.A.)

Linda K. Aylsworth
Joshua N. Ciernia
Lisa A. Dannewitz
Timothy A. Douma
Patrick W. Keenan
Ryan P. Peterson
Ann M. Reuter
Amy L. Schmiesser

BACHELOR OF SCIENCE DEGREE (B.S.)

Kyle D. Anderson
Tammi S. Bauer
Kimberly M. Bigelow
Reneé J. Blaha
Michael R. Bourdaghs
Abram H. Burgher
Kate A. Carlson
Jacqueline M. Casper
Cory J. Chopp
Kari J. Christoffeson
Claudia M. Conroy
Sarah M. Coplan
Paul R. Coppock
Phillip J. Demulling
Jennifer L. Dickmann
John D. Dingmann
Chanda L. Drennen
Douglas E. Dylla
Emily L. Erickson
Jacqueline A. Finck
Carl D. Freyholtz
David C. Gettman
Connie J. Hankins
Chad S. Heintz
Adam W. Henney
Jay D. Hildebrand
Karl M. Huff
Andela K. Jacobsen
Michael L. Janssen
Jill A. Kirkeide
Camille F. Kundel
Adam T. Lang
Jacob R. Lang
Jennifer M. Lang
Anthony K. Larson
Andrew T. Lenz
David B. Mach
David E. Mahagnoul
Jenny L. Maki
Angela T. Malley

Michael S. Malloy
Craig C. Maly
Brandon T. Martinson
Michelle S. Matejka
Jill L. McBride
Nathan D. McParlan
Marc S. McSherry
Erin S. Medin
Tracy L. Meek
Melinda A. M. Meyers
Nathan A. Milener
Abigail L. Miller
Angela B. Mossbarger
Erin L. Munson
Frances j. Newton
Nicole C. Norine
Ann M. Palmer
Mark A. Paulson
Kelli J. Polkinghorne
Kevin C. Reichart
Matthew M. Rossing
Christopher J. Sheahan
Tisha J. Simonson
Cory S. Sims
Chad D. Smith
Nicole L. Strand
Jonathan V. Svendsen
Anton J. Tremi
Scott P. Trombley
Jeanna M. Walters Tronnes
Joseph P. Trowbridge
Melissa L. Tvete
Kristopher J. Uber
Amber J. Ulseth
Teresa A. Venditto
Mark J. Vonderharr
Corey A. Warner
Bryan M. Weghorn
Tracy L. Wimer
Kristine R. Wyman

OUTSTANDING FIRST YEAR BIOLOGY STUDENT AWARD

by Tara Hoff

The Outstanding Freshman Biology Award recognizes the student who has excelled in the introductory biology courses (1111, 1112, and 1113 under the quarter system). The award is given on the basis of total points accumulated in lecture and lab, as well as recommendations from the teaching assistants. The teaching assistants base their recommendations on the students' enthusiasm for biology, their understanding of concepts, and their leadership in the classroom. The award recipient for the 1998–99 academic year was **Beth O'Brien** from Lakeville, MN. She received a plaque and a Duluth pack for her excellence in biology.

Currently, Beth is a sophomore Biology major taking courses in organic chemistry, physics, and economics/statistics. She is involved in various activities, including aerobics and intramural sports here at UMD. She also enjoys camping, hiking, volunteering, and being with her friends. Beth is unsure of what her future will bring, but she would like to pursue a career in environmental biology. She has a special interest in pollution control and plans on working at a pollution control agency this summer.



Beth O'Brien

FIRST TURCOTTE SCHOLARSHIP WINNER

Ann Torborg, a junior Biology major from St. Joseph, Minnesota, is the first student to be awarded the \$1000 Turcotte Scholarship in Biology. The scholarship was endowed by Dr. Edgar Turcotte in memory of his parents and will be awarded annually to an undergraduate majoring in biology. Ann had the highest grade point average of applicants for the scholarship and has excelled especially in courses in organic chemistry and cell biology. In addition to her serious studying, she has been an active member of the PreVetMed Club, serving as its secretary this year. Ann says she has always been interested in animals and has worked at a veterinary clinic for several years. Her goal is to attend veterinary school and receive her DVM degree. In her spare time, Ann enjoys outdoor activities, especially swimming and water-skiing. Congratulations, Ann, on your accomplishments!



Ann Torborg receives the Turcotte Scholarship from Raj Karim

BIOLOGY CLUB "Where the Wildlife Is"

by Kristin Kielsa and Anna Varner



Biology Club Officers: Front Row (L to R): Mary Moe, Anna Varner, Kristin Kielsa
Back Row (L to R): Marni Hogen, Angie Halgren

The mission of the Biology Club is to provide biology students with a connection to biology faculty and to other students. This year the biology club has over 50 members and has held many social events, as well as interesting educational activities. These include seeing "Amazon" at the Duluth OMNIMAX, a weekend excursion to the new Science Museum in St. Paul, and meeting candidates applying for open positions in our department.

We have enjoyed many outings and events so far this year and are looking forward to upcoming activities. During the first week of April, we held our annual Beta Fish Fundraiser. Also, on April 20th, Earth Day, we were proud to present Dr. Mattoo as a guest speaker in the Spectrum Lecture Series. Our club is also excited about hosting the annual biology department spring picnic.

Biology Club officers for the 1999–2000 school year are: Kristin Kielsa and Anna Varner, Co-Presidents; Angela Hallgren, Treasurer; Mary Moe, Secretary; and Marni Hogan, Undergraduate Representative. For more information about the Biology Club, visit us at: www.d.umn.edu/biology/club/home.html

THE TOOTH FAIRIES

by Vanessa Strom and Adam Huneke

The 1999–2000 school year has been an exciting one for the UMD Pre–Dent Club. Our organization has been designed for motivated students who wish to be accepted into dental school and enter the incredible field of dentistry. The main goals of the club are to provide a support system for members and help in the decision process of pursuing dentistry and choosing which school to attend. There are many ways that the members support each other. Older members pass on knowledge and advice to younger members about preparing for classes and for the DAT (Dental Admission Test). A DAT file is currently being established for our members to aid them in their learning process.

Current activities include intramural broomball. Although our present record may not be perfect (0–4–1), we play with heart. Last season, we called ourselves, “Novocain”. After ending the season with a 0–5 record, we thought the “Tooth Fairies” would be more appropriate. This year the club has also had several pizza parties and a volunteer activity at the Women’s Coalition that included cleaning the shelter.

Our future plans include hosting a guest speaker such as an oral surgeon or an orthodontist, a spring campus clean-up, and a spring barbeque.



*PreDent Club members: Front Row (L to R): Todd Christianson, Vanessa Strom
Back Row (L to R): Russ Dylla, Adam Huneke, Cory Larson, Scott Johnson*

PRE VET MED CLUB

by Barb Isaacson

The Pre Veterinary Medicine club had another great year. It started with an orientation picnic in the back yard of Dr. Raj. Karim, our club advisor. This provided incoming freshman with an opportunity to meet existing members as well as many of the Biology Department faculty. Even though the weather was not in our favor, we had a good turn out and were able to welcome a good number of new freshman to our club. In addition, we have welcomed a number of upperclassmen to the club this year, and our club is now at a record high of 34 members.



PreVetMed Club Officers (L to R): Barb Isaacson, President: Ann Torborg, Secretary: Mike Newfield, Public Relations: Raku Petterson, Public Relations: Aaron Hokanson, President-elect

One of our more interesting outings this year was a behind-the-scenes tour of the Lake Superior Zoo. We learned about feeding habits of some of the animals, saw a number of x-rays, and saw some slides of blood work. In addition to the Lake Superior Zoo, we also made a trip to the Minnesota Zoo in Apple Valley. We also took our annual trip to the University of Minnesota School of Veterinary Medicine in St. Paul. There we learned about admission processes, saw the classrooms and laboratories of first year students, and saw parts of the campus small animal hospital.

As a club we provide students with an opportunity to meet others with a common career goal and provide opportunities to learn about admission to veterinary schools. Anyone interested in being a part of the Pre Veterinary Club should contact Barb Isaacson at bisaacso@d.umn.edu

THE PRE–OPTOMETRY CLUB

by Emily Dold and Dena Bauer

The UMD Pre–Optometry Club is fairly new. The club’s officers, Dena Bauer (sophomore) and Emily Dold (junior) are currently trying to promote the club and build its enrollment. The club is a very useful tool for students who are interested in optometry. There is information available about various optometry schools, the OAT admissions test, requirements for entry and much more.

Future plans for the club include appearances by guest speakers discussing the profession and fieldtrips to doctor’s offices to see first hand what an optometrist’s job includes. An Optometry web page is also partially completed.

For anyone interested in joining, contact Dena (dbauer@d.umn.edu), Emily (edold@d.umn.edu), or Dr. Conrad Firling, Pre–Optometry advisor.



PreOptometry Club: Emily Dold and Dena Bauer



A General Biology student in the accompanying photo is using some of the new computer equipment purchased from CSE Technology Fee funds. In the introductory biology laboratory, each of the six benches has a computer that is networked with others in the room, including an instructor's computer, using RadioLAN wireless technology. Several interactive learning packages have been developed which allow students to see images (microscopic sections of tissues and animal dissections, for example) on their computer screen and then click on labels to locate important structures. The eventual goal is to develop learning packages for each lab exercise on a CD ROM, for use as instructional and review tools. The proposal for these funds was submitted by Lyle Shannon, Kay Rezanka and Linda Holmstrand.

SENIOR SPOTLIGHT

by Charlene Johnson

For many biology undergraduates, their senior year seems so far off and graduation a distant dream of a diploma announcing their new title: Bachelor of Science. For seniors, however, this dream is fast becoming a reality as they prepare for the conclusion of their undergraduate career. Whether you jam pack your year full of courses you've put off over time, or relax with a few enjoyable electives, your senior year is a time to make decisions that can affect your entire life after graduation.

Marni Hogen expects to graduate this spring, majoring in Biology with minors in Chemistry and Environmental Studies. Her senior year has been jam packed with many different courses in her major and minors, leaving her little time for freedom, but she says it's worth it so she can graduate in just three years. She hopes to get a job in the field of environmental biology and perhaps go to law school to study environmental law.

Marni's life at UMD has been very full. She has participated in Biology Club, Glensheen tour guiding, academic orientation assistance, and

Kirby leadership program, besides having a very full course-load. She says she can't wait for the time when she doesn't have to live out of her daily planner. Marni has gained many insights and contacts through her days at UMD that may lead her to a future with Minnesota Pollution Control Agency, or other companies who have recently received her resume.

Frank Modich has also been very busy at UMD during his 5 years as an undergraduate pursuing a double major in Cell Biology and Biochemistry/Molecular Biology. He'll finally be graduating this spring and hopes to attend the School of Veterinary Medicine in the twin cities. Alternate plans might be to attend William Mitchell Law School to become an intellectual property manager.

During his stay at UMD, Frank participated in intramural sports and Two-to-Tango dance club, but regrets not getting involved with varsity sports. His most meaningful experience was when, after taking biology and chemistry courses, he was offered opportunities to be a undergrad teaching assistant in those courses.

It meant a lot to him to help students understand the concepts of the class.

I, **Charlene Johnson**, am a senior, finally graduating after 5 years. I started at the University of Alaska, spent some time at Lake Superior College, and finally found my calling at UMD. My senior year has been a mix of both jamming and relaxing, including the elusive Quantitative Analysis (for my Chemistry minor), Evolution, a few lab courses, electives, and three concurrent research projects during my first semester. My final semester consists of two electives that I have thoroughly enjoyed and a simple little seminar requirement.

I have decided to pursue graduate school at UMD to study plant ecology. My goal is to conduct field research related to plant ecology on a contract basis with government agencies in northern Minnesota, or to work with industries such as mining, logging, or land development. My experiences with undergraduate research, Biology Club, and writing for the Life Scientist newsletter have helped me broaden my horizons much further than I would have ever expected.

T. O. ODLAUG AWARD

by Megan Kingsley



Cory Sims

Our advice for undergraduates is

“Get involved!” Undergraduate research opportunities are invaluable preparations for a career beyond the university. Make good use of faculty, staff, and especially your advisor, who can introduce you to a whole world of resources and opportunities that you may never find on your own. I thank Dr. David Schimpf who helped me open many doors leading into my future career. Marni thanks Lyle Shannon and Janny Walker for their advisement and impeccable organization. Frank wants to thank the Biology Department for three wonderful years, with special thanks to Dr. Raj Karim and Dr. Arun Goyal for their insight and support. The professors and staff at UMD can help you achieve the goals that you set for yourself, and even some new ones. Frank leaves us with a strong piece of advice: “Set your goals high and shoot for them. When you have difficulty in reaching these goals, do not lower them, but set them higher. You are only given one chance to succeed, so make the most of it!”

Cory Sims is the twentieth recipient of the Odlaug Award. Since 1979, the Biology faculty has nominated a senior biology student who displays scholarship, strong leadership qualities, service to department, and participation in undergraduate research. The award was created in honor of Dr. Theron O. Odlaug, a former department head who retired in 1978. Dr. Odlaug passed away this past January. As a supplement to the award, the recipient is given a reference book of her choice.

Cory graduated magna cum laude with a bachelor of science in biology. In her undergraduate career, she was a CSE student mentor, a biology student representative, a general biology supplemental instructor, and a research assistant in the UMD Medical School. She also worked as a vet assistant at the Duluth Veterinary Hospital.

Cory is completing the second semester of her first year at the University of Minnesota College of Veterinary Medicine. Her course load includes physiology, pharmacology, neurobiology, and organology. She is working as a vet assistant at the McKeever Dermatology Clinics in Edina. She’s a representative on the student council of the American Veterinary Medical Association and a student technician in the chemistry and hematology lab of the University of Minnesota Veterinary Teaching Hospital.

Cory writes that toughing out the upper division biology courses that were collaborated with the medical school faculty at UMD gave her a solid foundation for her current veterinary school courses. She appreciates the help she received from all the professors who were willing to listen to her questions and offer advice when she was making plans for vet school. These include Cathy Podesczwa, Dr. Karim, Dr. Schimpf, Dr. Firling, and medical school professors Dr. Johnson and

Dr. Severson. She would also like to thank the staff she worked with at the Duluth Veterinary Hospital. She writes, “My experiences there remain a primary reason why I want to become a veterinarian — and what keeps me involved with my work at school.”

Although she misses Duluth and working with the biology supplemental instruction program, she and her husband are having a wonderful time exploring the plethora of activities in the twin cities. They celebrated their first wedding anniversary this past December. Cory would like to eventually enter a mixed animal practice and “work in a small, semi-rural community — pretty shocking for a city girl from Southern California!”

UROP AWARDS

by Charlene Johnson

The Undergraduate Research Opportunities Program (UROP) is a wonderful opportunity for students to get started on their way to becoming research scientists. In the past, the UROP program, which is open to all University of Minnesota students, has sponsored more UMD Biology majors than in any other field. Within the biology program, UROP projects have been completed in plant and animal ecology (both terrestrial and aquatic), cell biology, microbial biology, and various medical topics.

As an undergraduate, I was awarded a UROP grant for the study of two rare plants in St. Croix State Park in Pine County, Minnesota. This study gave me hands on experience in research design and implementation, vascular plant identification, field experience in data collection and analysis of plant population and community interactions and soil composition. I also learned that field work is not the only component to a successful research project. Throughout the project I was in close contact with park officials, the Minnesota Department of Natural Resources, the National Park Service, and, of course, my advisor, Dr. David Schimpf. The associations that I made throughout the course of this project are invaluable when considering my future as a field botanist. UROP can give participants the incentive to gain practical experience and make critical contacts that will set them competitively above many of their graduating colleagues when it comes time to finding a job or applying to graduate school.

UROP participants are eligible for up to a \$1400 stipend and \$300 toward expenses incurred throughout the project. Grants are generally offered for 1 year. Listed below are the names of Biology and Cell Biology majors, their project titles, and faculty sponsors for spring through fall 1999:

Elizabeth Bradley

"Betulin, Allobetulin, and Derivatives as Antifungal Agents"
Sponsor: Dr. Raj Karim, Biology

Lionel Brounts

"Isolation of Noval Genes Induced by Micro-Gravity in *Dunaliella*"
Sponsor: Dr. Arun Goyal, Biology

Lina Castilla

"Isolation of Algal Mutants for Biodegradation of Organic Materials"
Sponsor: Dr. Arun Goyal, Biology

Kari Dresback

"Phytoremediation"
Sponsor: Dr. Arun Goyal, Biology

Sarah Elfering

"Redox Signalling: Characterization of Mitochondrial Nitrosylated Proteins"
Sponsor: Dr. Cecilia Giulivi, Chemistry

Ryan Horazdovsky

"Effects of TGF-B on Osteoclast Activation"
Sponsor: Dr. Merry Jo Oursler, Biology

Charlene Johnson

"Ecological Survey and Collection of Rare Plants in St. Croix State Park: *Lysimachia quadrifolia* and *Cirsium hillii*"
Sponsor: Dr. David J. Schimpf, Biology

Benjamin Koch

"The Effect of Betulin, Allobetulin, and Derivative Against Three Different Bacteria"
Sponsor: Dr. Raj Karim, Biology

Rachel MaKarrall

"Long Term and Seasonal Effects of a Non-Native Predatory Cladoceran (*Bythotrephes cederstroemi*) on an Inland Lake Zooplankton Community"
Sponsor: Lyle Shannon, Biology

Venu Nayar

"Antifungal Activities of Polyethyleneimine Derivatives of Betulin Against *Candida* Species"
Sponsor: Dr. Raj Karim, Biology

Melissa Sadlovsky

"The Functional Role of Nuclear Lamins During S-phase of the Cell Cycle"
Sponsor: Dr. Jon Holy, School of Medicine

John Schwalbe

"A Comparative Study of the Effects on Temporary Ponds of Clear-Cut Logging"
Sponsor: Dr. Gerald Niemi, Biology

Christian Sutter

"Cardiovascular Responses to Acute Stress in Oral Creatine Supplement Users"
Sponsor: Dr. Mustafa al'Absi, School of Medicine

John Thull

"Identification of Chloroplast Envelope Proteins Affected by Carbon Dioxide"
Sponsor: Dr. Arun Goyal, Biology

Kathren Tuck

"A Study of the Effects of A5 Bulges on RNA Folding"
Sponsor: Dr. Peter Kebbekus, Chemistry

LAKEHEAD PIPELINE SCHOLARSHIPS

Two Biology students have recently been awarded \$1,100 scholarship awards by Lakehead Pipeline System, the world's longest pipeline system for liquid petroleum. The students are **Vicki M. Krebsbach**, a senior majoring in Life Science Teaching and **Joshua Zellman**, a sophomore PreVeterinary Medicine major. Congratulations to both students!

ALUMNI NEWS

by Charlene Johnson

Beth (Coleman) Boman (B.S. '87) is married with a 6 year old daughter, Laurel. She has been working in the Analytical Research and Development lab for 3M Pharmaceuticals in St. Paul for the past 10 years, first as an analytical chemist, currently as a medical services associate.

Dr. Carmen Czachor (B.S. '86) graduated from the University of Minnesota College of Veterinary Medicine in 1995. She now has a private veterinary practice in Port Angeles, Washington. She is married to Andrew May and has two children, Spencer and Jason.

Diane (Harrison) Grell (B.S. '91) completed her master's degree in education from St. Scholastica in July of '99. She has been teaching science at Proctor Junior High School for the last five years. She has two sons, Lucas and Jonathan.

Kelley Rae Jewett (B.S. '84) has practiced family medicine in Liberia, West Africa, during her service to the Peace Corps. In January of 2000, she returned to Liberia to work in a hospital and will stay at least three years.

John Krenz (M.S. '88) earned his Ph.D. from the University of Georgia in 1995 and conducted postdoctoral research at the University of Missouri, Columbia, from 1995–1998. He is now an assistant professor of biology at Minnesota State University in Mankato. He and his wife Elaine have two sons— Karl (3 years) and Erik (1year). John visited UMD this past winter and presented a seminar entitled “Sexual Strategies in the dimorphic mole salamander *Ambystoma talpoideum*”.

Geri Tesser (B.S. '92) is currently teaching science in the Stillwater Area School District.

Matthew Vaillant (B.S. '95) is currently a junior in the U of M School of Dentistry in the twin cities. He and his wife, also a graduate of UMD, have a four month old son. Matt is looking forward to joining his family's small town practice upon completion of his degree.

****Editor's Note: Biology Alumni, please use the response form on the back of the newsletter, or email lholmstr@d.umn.edu to let us know about your life after UMD. Your former professors and classmates are interested in your whereabouts and your accomplishments.**

SPECIAL OPPORTUNITIES TO SUPPORT UMD BIOLOGY STUDENTS

by Randall E. Hicks,
Biology Department Head

The contributions of friends and alumni continue to be an important resource as we grow and improve. This year, we are thankful to have received several large gifts, but we are equally appreciative of the smaller gifts which are the core of our development program (please see our list of donors). No matter how small a gift, there are special areas in our department where your gift will make an important difference.

Now for the Good News and Surprises – The First Good News

Last year, the first permanently endowed scholarship was developed for undergraduate biology majors at UMD – the Edgar and Alma Turcotte Scholarship. Only a few months after presenting the first \$1,000 scholarship last fall (please see accompanying article), we received an early Christmas present. Dr. Ed Turcotte made another generous contribution that doubled the size of this scholarship endowment. Now, we can award two \$1,000 Turcotte Scholarships each year. We are extremely thankful for Dr. Turcotte's continuing generosity!

A Great Loss, but an Unexpected Surprise

In late January, Dr. Ted Odlaug passed away. Many of you remember Dr. Odlaug as a mentor and the long time Head of the Department of Biology (please see the article on the front page of this newsletter). We appreciate the many donations we have received for the "Ted Odlaug Scholarship Endowment Fund" which was set up by Lucille Odlaug. These initial gifts took us a

long way toward developing a permanent scholarship in Ted's name. Just three weeks ago, though, we were pleasantly surprised when UMD received a \$50,000 donation to this scholarship endowment from one of Dr. Odlaug's former students. The donor wishes to remain anonymous but wants to challenge all of Dr. Odlaug's former students to also contribute to this scholarship fund. We are overwhelmed by the generosity of this anonymous donor. Whoever you are, please know that the Odlaug family, our department, and UMD students appreciate your thoughtfulness. In the future, our department will proudly award at least two \$1,000 scholarships each year to undergraduate biology students in Dr. Odlaug's name. Thank you to everyone who has contributed!

Another Pleasant Surprise

Only this year did our department realize that Dr. Hollie Collins, one of our emeritus faculty members, had been developing a "Fish & Wildlife Endowment" to help students and enhance fisheries and wildlife education at UMD. Dr. Collins did this gradually before he retired. This endowment will be renamed to honor Dr. Collins and used wisely in the future with his guidance. Thank you Hollie!

Our Students Still Need Your Help

One of our goals last year was to raise \$10,000 by July, 2000 to endow a Biology Student Awards Fund. Obtaining university funds to develop student awards is nearly impossible

after the other needs within the university are met. This fund will permanently provide funds for small gifts to accompany our existing annual awards such as the Outstanding Freshman Student Award and the Outstanding Graduate Teaching Assistant Award. The endowment has grown during the past year but our goal has not been met. We need your help if we are to finish this endowment by our target date. The Biology Faculty have already contributed almost a quarter of the funds needed to meet our goal because they understand the importance of recognizing students in all stages of their education. If you want to help us reach this goal, please earmark your gift for the "UMD–Biology Student Awards Fund".

Our second goal continues to be raising a larger endowment over the next five years to support undergraduate and graduate research. Our third goal is to endow annual support for the student clubs associated with the Department of Biology (i.e., Biology Club, PreVet Med Club, PreDent Club, PreOptometry Club). The emeritus faculty, your past professors, are very excited about these fundraising goals we have set. If you, your family, or your business would like to help us reach our goals, then please contact either myself (218–726–7263; rhicks@d.umn.edu) or Steve Johnston in the UMD University Relations and Development Office (218–726–6995; sjohnst1@d.umn.edu) to discuss your gift further.

With a gift of \$10,000	You Can: Permanently endow a student scholarship or research award named for a loved one or a favorite professor
\$1,000	Help us complete our UMD–Biology Students Award Fund or reach our student research endowment goal
\$100	Support student clubs in the Biology Department or contribute to our unrestricted Biology Department Fund

All gifts to our department and UMD are tax deductible and the UMD Development Office will be glad to provide the documentation you need. Many corporations and organizations match individual donations to educational institutions, so I urge you to inquire whether your employer will match a contribution you might make to the Department of Biology. Please send your gifts to Steve Johnston at the UMD University Relations and Development Office (315 Darland Administration Building, UMD, Duluth, MN 55812). We are truly grateful for the continuing generosity of our alumni and friends.

GIFTS AND DONATIONS

The following alumni and friends made a donation to the UMD Biology Department in the past year. We sincerely appreciate their generosity. These contributions have helped us to fulfill our educational mission.

Mr. Philip D. Loucks
 Dr. Armas W. Tamminen
 Mr. Mark S. Schaberg
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For more information on the UMD Biology Department, visit our web site at:

<http://www.d.umn.edu/biology>

The Life Scientist is also available on this website.

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The Life Scientist — 2000

An annual newsletter for alumni, faculty, staff,
students and friends of the UMD Biology Department

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