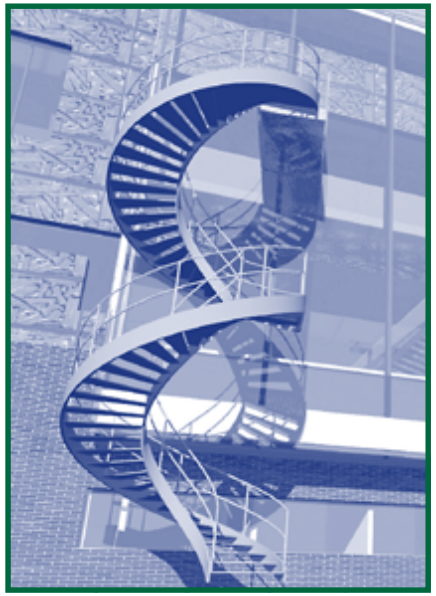
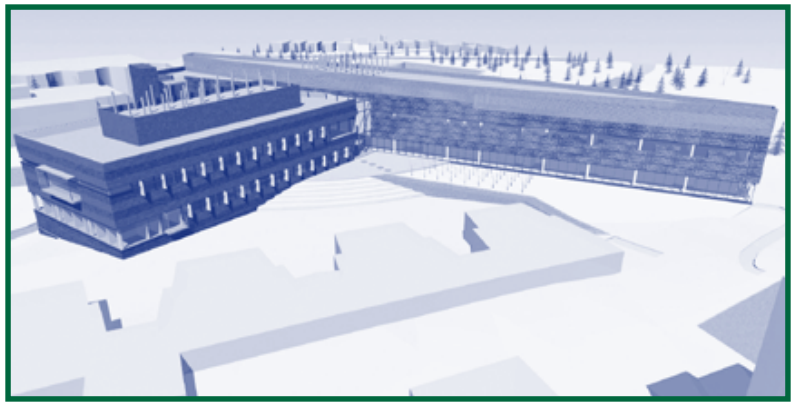
The Life Scientist

UMD Biology Department News

Winter 2002



Architect's sketches of the James I. Swenson Science Building Spiral Staircase (above) and an aerial view (below).



Taking Science Students to the Next Level

by Linda Holmstrand

If all goes as planned, a groundbreaking ceremony for the new James I. Swenson Science Building will take place sometime next October. The much-needed building, to be constructed in part through a $7.5 million gift from the Swenson Family Foundation and Jim Swenson, a UMD Chemistry alumnus, received a bonding bill from the State of Minnesota this spring. It is the first time a UMD building has been listed as a top priority by the Governor. Actual construction at the Kirby Avenue site between the Life Science Building and Vermilion Hall, may start as early as winter 2003, with occupancy scheduled for summer 2004, prior to the start of fall classes.

The new building will provide research lab space and instructional facilities to meet the increasing needs of the UMD Biology and Chemistry departments. The building design features a 3-story classroom building with an adjacent 3-story research laboratory wing. A student commons area will form the crossroads where the two buildings intersect. Current design provides for two general biology classrooms and four upper division teaching laboratories in cell biology, molecular biology, animal systems biology and biochemistry. Twelve research laboratories are planned, as well as the department office, some faculty offices, shared Biology/Chemistry computer labs and other common facilities. The Chemistry portion of the building will also contain research laboratory space and classrooms for instruction of organic and molecular chemistry.

This building is destined to become one of the focal points of the UMD campus. The University has selected John David Mooney, an environmental artist and one of the world's foremost sculptors and proponents of public art, to create a sculptural installation for the Swenson Science Building. Mr. Mooney takes inspiration for his sculptures largely from science, but with an interdisciplinary approach and the view that "art and science are somewhat conscious of one another." He has been widely recognized for creating sculptural pieces for the Vatican Observatory, where he has been the first artist in residence since the Renaissance. A book detailing this work has recently been published by University of Notre Dame Press. Mr. Mooney is also known for bringing light, in the form of lasers, neon, searchlights and strobes to his contemporary works. This spring, Mr. Mooney lead a workshop of students and faculty from Biology, Chemistry, and Fine Arts to brainstorm ideas for the pieces he will create for UMD. Participating from Biology were students Katie Barrato and Margot Bergstrom, along with Professor John Pastor. It was decided that the theme of the sculptures would be taken from biologically important molecules, such as hemoglobin, in keeping with the collaboration between the Biology and Chemistry Departments in developing and occupying the building.

Designers of the building's exterior have been challenged to integrate the building into the overall campus plan, as well as the Duluth community and the northeastern Minnesota region. A native species of wood – tamarack – as well as a form of exterior siding developed from compressed taconite, have been chosen as some of the building materials. An exciting feature of the landscaping will be a small ecology wetlands area, to be used as an outdoor classroom and accessible from the building by way of a spiral staircase.

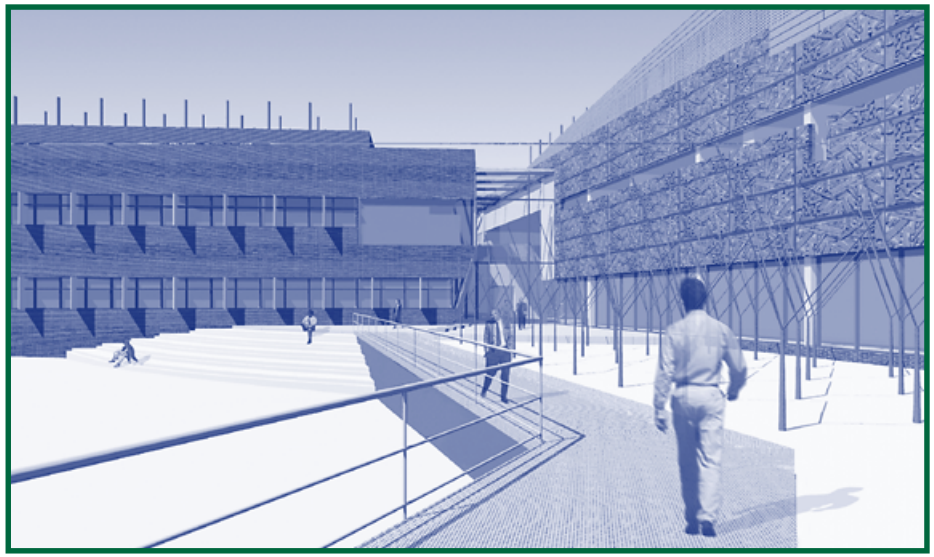
The Biology Department is currently bulging the walls of the existing Life Science Building, first occupied in 1968. In the last decade, a number of classrooms have been converted to research labs and offices to accommodate new faculty and programs, yet many of the Biology faculty still occupy research facilities outside the Life Science Building. Classroom scheduling has become extremely restrictive, and it is common for biology classes to be taught in adjacent buildings or in the library. Remodeling of the ventilation system and asbestos abatement in the current Life Science facility are also critical for existing space to be used safely in the future.

Earlier this spring, Chancellor Kathryn Martin, CSE Dean James Riehl and Jim and Susan Swenson hosted a "Sneak Preview" of the building for Duluth area alumni and friends. All Alumni will have an opportunity to share in the excitement at the groundbreaking ceremony this fall.

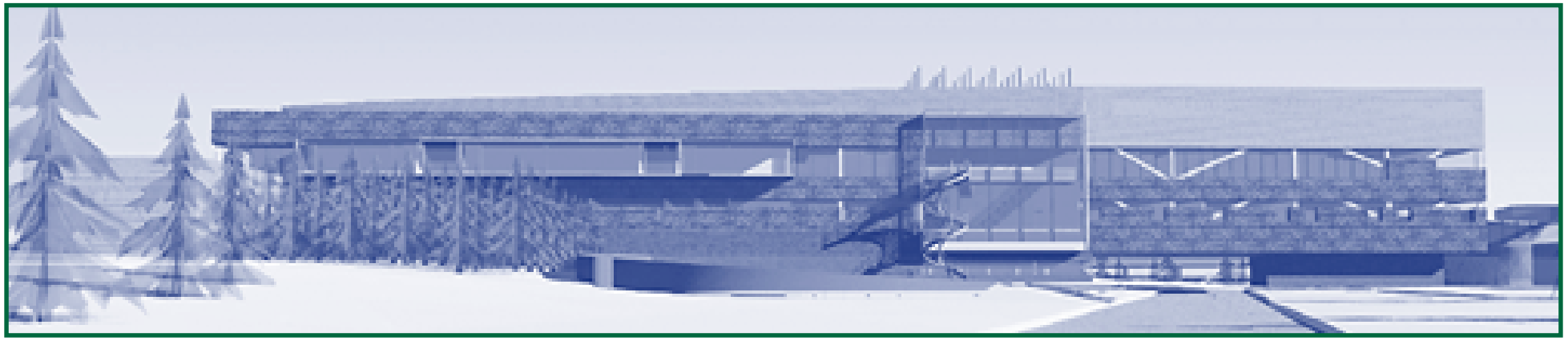
In addition we are planning a Biology Alumni event to coincide with Homecoming. This is scheduled for Friday, September 28, and will include an open house and reception in the afternoon. A committee chaired by Stacy Johnson (Biology Department Receptionist) and including Merry Jo Oursler (Biology Faculty), Jack Hofslund and Helen Hanten (Biology Emeritus Faculty), Barbara Reidel Sheedy (UMD Biology Alumnus), Pearl Brugger (UMD student) and Kate Andrews (Biology Faculty wife) is planning the event. All alumni will receive an invitation. Contact any member of the committee or the Biology Department (218-726-6262) for further information on the fall Biology events. You are also invited to read about current news happenings each month in *Biochat,* found as a link to the biology website at **www.d.umn.edu/biology/**

The new science building also presents a once in a lifetime opportunity for alumni to give a lasting gift of remembrance. You can honor a loved one, memorialize a favorite professor or commemorate your time in the Biology Department in many ways. Think about naming a laboratory, a classroom, or an undergraduate research table with your contribution. Funds raised through naming opportunities will also be used to support undergraduate student research projects. For more information on naming opportunities, please contact Tricia Bunten, Development Director for the College of Science and Engineering at (218) 726-6995 or toll-free at 1-866-999-6995.

The Biology Department will keep you updated on the progress of the new building in future issues of the *Life Scientist.* We are very excited about this new facility and the many ways it will allow us to better serve students. We plan to host an All Biology Alumni Reunion in the fall of 2004 in conjunction with the opening of the new James I. Swenson Science Building and hope that you, our friends and alumni, will participate.



Architect's sketches of James I. Swenson Science Building intersections (above) and front view (below).



Conrad Firling Retires after 32 Years

by Stacy Johnson

Dr. Conrad Firling is retiring this spring semester. For him this is something of a paradox for he has always said that he "would retire when I had to go to work, but I have never really considered my time at UMD as work". Generations of UMD students will recall him as the rigorous, usually serious, professor for their first general biology course. Over the years, he has taken the lead in developing and maintaining a strict standard of excellence for the introductory course.

Dr. Firling has had a successful and distinguished career at UMD, in teaching and research as well as service. After receiving his B.S. and M.S. degrees from De Paul University and his Ph.D. from Southern Illinois University, he joined the UMD biology faculty in 1970. His teaching responsibilities have included developmental and cell biology and embryology in addition to the introductory course. During the past thirty-two years, he has published numerous chapters and articles on his research, particularly in developmental endocrinology, larval insect gene expression, fish physiology and reproduction, and embryonic skeletal tissue formation during aluminum toxicity. In 1978 he published a paper describing a new medium for the prolonged in-vitro culture of insect polytenic tissues. This led to a number of invitations, including major presentations at the International Invertebrate Tissue Culture Conference at Rigi Kaltbad, the ETH in Zurich, the Institute for Genetics at the University of Saarsland, and the Annual Tissue Culture Association Meeting.

Always a strong advocate of student research, Dr. Firling has a long record of participation and service in CUR (Council on Undergraduate Research). He was a CUR Biology Councilor from 1992 to 2000 and for six years was the CUR Biology Division

Professor Conrad E. Firling

National Secretary. In addition, he was an associate editor of several editions of the CUR Biology Division Research Directory, a CUR national speaker and a CUR consultant and program reviewer for biology departments across the country. At the campus level, Dr. Firling has been an active member of the Duluth Chapter of Sigma Xi, a research society, and was elected three times as president and selected four times as a Sigma Xi national delegate and regional speaker. In 1984, he established the Duluth Chapter Sigma Xi Annual Poster Exhibition, a popular campus event that continues to this day. Dr. Firling is a former Director of Graduate Studies for the biology graduate program, a former Associate Department Head, and has served as a member of numerous campus and university-wide committees. He was a member of the Campus Assembly for more than twenty-five years.

When asked what aspects of his career he is most proud of, Conrad emphasized the accomplishments of his undergraduate research students. He mentored five students who published "solely student-authored" papers in the proceedings of NCUR and more than fifty students who gave oral or poster presentations at national and regional conferences. He proudly pointed out that in 1997 and again in 2001, two of his undergraduate students were among only 60 students selected nationwide to present their research findings to members of the United States Congress, NSF, NASA and NIH administrators as part of the Posters on the Hill Program in Washington DC. For himself, Conrad only mentioned two particular honors. In 1989 he received the UMD Blehart Distinguished Teaching Award and the Iowa Health Sciences University Outstanding Advisor Award.

Most recently, Conrad has been an editorial reviewer for the popular general biology text by Campbell and Reece and a contributor to the text's ancillary package. This spring, he plans to submit his last research publication entitled "Effect of Aluminum on Chick Embryo Tibia Histology and Histomorphometry".

Conrad doesn't plan to let his retirement slow him down (literally)! A long time runner, he intends to continue to run distance races until he reaches his next "age category." In fact, next fall he would like run either the Chicago or New York Marathons, if only for the fun of the event. Conrad's spouse Martha, an accomplished linguist, teaches French at the Marshall College Preparatory School in Duluth. She is also active at the Duluth Playhouse and sits on a number of Duluth boards and commissions. With retirement, they plan to travel extensively, especially in Provence and Tuscany, patronize the Arts and Theatre in Chicago, New York and London, take several downhill ski trips out west each winter, and continue to explore northern Minnesota's Boundary Waters Canoe Area each summer and fall.

After 32 years of teaching at UMD, Conrad says that he "will miss the biology faculty, staff, students and his campus-wide colleagues as well as the excitement, anticipation, and apprehension that permeate the campus at the beginning of each fall semester". What won't he miss? "Grading essay examinations and laboratory reports". Looking back, he observed, "Most students considered me a very demanding and serious instructor. What many students never realized was that I constantly make truly outrageous statements with a perfectly straight face." He recalls one of these instances during a lecture on Mendelian genetics, in which he projected pictures of a South St. Paul man with a werewolf phenotype and a North Minneapolis woman with a vampire phenotype. The students frantically continued to take notes.

In April, the Biology Department faculty, staff and emeritus faculty "roasted" Dr. Firling at a retirement party. (Ask him about the "Survivor Kit" for his next camping trip or the "Geriatric Running Cane" presented as gifts.) On a more serious side, the department also hosted a campus wine and cheese reception in his honor at the Griggs Center. We certainly wish Dr. Firling the best, and hope that his retirement will be as rewarding as his career.

Insect Galls and Goldenrods are Pieces of the Puzzle

by Linda Holmstrand

Dr. Joanne Itami, an adjunct faculty member in the Department of Biology, is an evolutionary ecologist who studies populations of gallflies and their host goldenrod plants. She spends countless hours in the laboratory, using allozyme electrophoresis and other molecular techniques to examine broad patterns of genetic variation in the hope of finding subtle genetic reasons how and why insects and plants co-evolve. Her work on the fly *Eurosta* complements the research of her husband and collaborator, Dr. Tim Craig, who is an insect ecologist and faculty member in the Biology Department. Joanne and Tim are investigating one of the most elusive questions in evolutionary science: how do new species evolve? The model system they use is the gall forming goldenrod fly *Eurosta* and two host species of goldenrod. At some time in the past, some subset of that fly population shifted its attack to a different goldenrod species. The flies on the second goldenrod species do not mate readily with the parent population and may some day become differentiated enough to be considered a separate species. How this happens is the puzzle.

Dr. Joanne Itami

Dr. Craig brings to the collaboration a "big picture" view of evolutionary ecology and draws on his expertise in entomology, evolution and fieldwork design. Dr. Itami's background has a more technical basis, and she has taken the lead in the laboratory RNA work that works out the molecular genetic aspects of the relationship between the populations of gall-making flies and the two species of goldenrod. The study also includes intensive laboratory work on the behavior of flies under controlled conditions. Experiments with controlled environmental cues such as light, temperature, humidity and presence or absence of host plants, have revealed important environmental and behavioral mechanisms that affect gene flow between fly populations.

Tim and Joanne have a successful collaboration that has spanned two decades. The move to Minnesota two years ago has given new direction to their work, especially since there is now year-round access to the insects and plants. Also new colleagues have provided information on Minnesota's natural environment. Dr. David Schimpf has provided insight into plant population patterns, which should aid in the investigation of the hybrid zone that separates the prairie and forest biomes. The goldenrod galls in the study are found in west central Minnesota where prairie and temperate forest biomes meet. Deb Pomroy-Petry, Olga Lakela Herbarium staff member, has lent her taxonomic skills in the species identification of goldenrod samples and Deb Shubat of the UMD Biology Greenhouse, recently perfected a technique for rearing goldenrod from seed, an essential step for examining host plant hybrids. Another colleague, Dr. Matt Andrews, has introduced them to a gene expression analysis technique that may be applicable to the *Eurosta* system. Extraction of fly RNA and subsequent analysis using Affymetric Chip technology may determine the minor genetic changes which have resulted in major behavioral and physiological changes.

Student researchers have always had a role in Joanne and Tim's research. This past year, UMD students Jeremy Marincel, Kevin Johnson and Katrina Whitehead have been involved in UROP projects in their lab. Each student is working on a different part of the puzzle: Jeremy on the impact of bird predation on gall morphology in the forest and prairie habitats, Kevin on the ploidy levels in the host plants on galled and ungalled individuals and Katrina on variation in the fly wing color patterns between forest and prairie habitats. The project includes fieldwork to collect the galls from throughout the state, as well as the careful work of incubating, hatching and rearing of the gall insects.

Dr. Itami received her Ph.D. in Zoology from Northern Arizona University and has a strong background of research and grant support involving not only gall-inducing flies, but also interactions between juniper twigs and their herbivores. She recalls spending a lot of time hiking the juniper woodlands, measuring tree branches, collecting beetles and trapping woodrats. She also learned to extract and analyze essential nutrients and defensive compounds from the juniper. Somewhere along the way, Joanne found she has an unusual ability to get insects to behave normally (mate) under very abnormal laboratory conditions.

In addition to her research, Dr. Itami has a broad background in teaching, mostly at Arizona State University West and Northern Arizona University. Her teaching repertoire includes courses such as Molecular Techniques, Ecology and Conservation, Human Biology and Animal Behavior. She is completing her second year of work at UMD since moving to Minnesota with her family in the fall of 2000. Joanne, Tim and their children Linda (11) and Paul (8) love Duluth and their family life here. They have settled into the school and community as well as the academic life at UMD and will continue to put together "pieces of the puzzle".

Stacy Johnson Joins Biology Office Staff

by Ruth Hemming

The Biology Department welcomes Stacy Johnson as Receptionist and Senior Office Assistant. Stacy, who officially started in her position on August 20, 2001, joins Ruth Hemming and Betty Myshack in providing clerical services to the department. In particular, Stacy facilitates copying of handouts and exams for courses, assists faculty with various projects and tasks, handles seminar notices, maintains departmental schedules, serves on the bulletin board/display committee and handles an array of other duties too numerous to mention. She serves as the department liaison with the Biology Club and is chairing the committee to organize the a Biology alumni event in coordination with the Swenson Science Building groundbreaking activities scheduled for this fall.

Stacy has a B.A. in English with minors in Linguistics, Music, and Biology from the University of Minnesota Duluth and is currently working towards her M.A. in English Literature. Originally from North Branch, Minnesota, Stacy now lives on the north shore in a small cabin with her dog, Brandy. She is a member of the Twin Ports Wind Ensemble and assists Assistant Professor Jo Mackiewicz in her linguistic research on politeness interactions. In her spare time, Stacy enjoys running, rollerblading, reading, writing, and spending time with her family, her fiancé, Matt, and her dog.

Faculty/Staff News Briefs

The Biology Department has been successful this past year in hiring two new assistant professor tenure-track faculty members. **Dr. Julie Etterson** has accepted a position for teaching and research in plant biology and **Dr. Anna Rachinsky**, a developmental biologist, will fill the position vacated by Dr. Conrad Firling. Both will join the department for the 2002 Fall semester.

Congratulations to…

Merry Jo Oursler for being awarded tenure and promotion to Associate Professor of Biology, effective Fall, 2001.

Tim Craig, Associate Professor, for being awarded indefinite tenure effective Fall, 2002.

Linda Holmstrand for receiving the CSE Outstanding Advisor Award for 2000-2001, one of 5 collegiate awards on campus.

Virginia Borden and **Allen Mensinger** for their selection to Tech Camp 6 for January 2002 and **Andrew Klemer,** Tech Camp 7 for Summer 2002. Faculty Tech Camps provide workshops and activities that help instructors link technological tools to the classroom.

Lyle Shannon, for his selection to Advanced Tech Camp for Summer, 2002. Lyle has also been a Faculty Technology Consultant for ITSS this past year.

Colleen Belk, Lyle Shannon and **Kate Stephenson** (Biology student) for obtaining $20,000 from CSE Student Technologies Fees to purchase equipment for the proposed Cell Biology laboratory course.

Lyle Shannon and **Linda Holmstrand** for their selection and participation in APT3 (Arrowhead Preparing Teachers to Use Technology) a collaboratory approach combining efforts of university faculty, public school teachers and student teachers to use technology in the classroom.

Deb Shubat, Biology Greenhouse Director, for her selection as recipient of a university-wide 2002 President's Award for Outstanding Service. Shub is only the second UMD recipient of the award in the past 5 years.

Randall Hicks for being awarded a sabbatical furlough for the 2002-2003 academic year. **Dr. Matt Andrews** will serve as Interim Department Head during this time.

Visit with a Professor Emeritus

by Linda Holmstrand

Hollie and Barb Colins in Hawaii.

"ALOHA" from Hollie and Barb Collins, winter vacationers on the Hawaiian Islands. The Collinses and longtime friends from Wisconsin spent two weeks on four of the islands - touring, snorkeling, swimming with giant green sea turtles, eating poi (and other unfamiliar delicacies) and enjoying leisurely pastimes. Dr. Collins, who retired in 1997 after 33 years of service, is one of eight retired UMD Biology professors.

Despite throat surgery to correct sleep apnea and the installation of a pacemaker two years ago, Hollie still maintains an active lifestyle on his "Holliewood" acreage near Floodwood, Minnesota. His log home was hand-built from poplar logs and is now completed and furnished, a unique blend of modern conveniences, antiques and country memorabilia. The property, situated on the Floodwood River, also has established garden plots, a young apple orchard with many grafts and a giant pole building (for the 5 tractors, the snowmobile, the ATV, the log skidder, etc. etc.) The site is ideal for country living and all that it brings.

Knowing full well what the answer would be, I asked, "Hollie, what kinds of things have you been doing for fun in your retirement?" I should have asked, "**Where** have you been fishing?" And so I heard about the 12# walleye he caught locally. And the annual pilgrimage to the Oregon coast for steelhead fishing. And the two fly-in Canadian fishing trips. All very entertaining, but far too many words for this short article. Actually, the fishing and other leisure activities have been sharply curtailed this past year because of family crises. Hollie's father passed away last summer and his mother suffers serious health problems and is currently in a nursing home in Wisconsin. This has meant many trips back and forth to Laona. The Collins clan is also increasing in number. Both Hollie and Barb spend considerable time with their 5 grandchildren who live in the area. They are Andrea (12), Ariel (10), Laurel (8) Brady (3) – yes, there is one grandson – and Kylie Ann (3 months).

"After these priorities, is there time left for other things?" Not so strangely, the words I wrote in the Collins retirement article back in 1997 are still true. "There is much to be done….. a storm left many acres of downed and uprooted trees to be dealt with, the garden requires ongoing attention, the orchard needs pruning and grafting and bees for pollination, in winter the deer wander in to be fed (*note: 16 of them last night*), the property needs to be rid of varmints, the grandchildren need spoiling**… and there are fish waiting to be caught."**

Current Faculty Funding

M.T. Andrews, U.S. Army Research Office, "Genetic Control of Carbohydrate Metabolism in the Heart of a Hibernating Mammal", 7/1/99 –6/30/03, $270,000.

M.T. Andrews, UM Biomedical Genomics Center Microarray Grants Program, "Affymetrix Analysis of Gene Expression in Hibernating Mammals", 2/12/01–2/11/02, $9,900.

M.T. Andrews, (co-PI with L.R. Drewes), Minnesota Medical Foundation Physiological Monitoring in Small Animal (Rodent) Surgery, $16,000.

M.T. Andrews, UM Graduate School Grant-in-Aid, "High-throughput Screening of Gene Expression during Mammalian Hibernation", 3/1/01 – 2/28/02, $28,041.

D. K. Branstrator (co-PI), M. Zhou, N. Wattrus, Minnesota Sea Grant College Program, "A multi-disciplinary study: the spatiotemporal distribution and productivity of zooplankton in the western arm of Lake Superior", 3/01 – 2/03, $90,000.

D. K. Branstrator, University of Minnesota Grant-in-Aid, "Chemical induction of body defenses in the water flea, *Daphnia*.", 7/01-1/03, $25,900.

T. Craig. National Science Foundation, "Networking our Research Legacy: Infrastructure to Document, Manage and Access Ecological Data".

A. Goyal, N. Nelson and V. Kapur, Sota Tec, "Production of High ValueBiomolecules in Transgenic Hybrid Poplar", 10/01 – 9/02, $100,000.

N. Nelson, C. Edwardson and **A. Goyal,** PD, USDA-CSREES, "Forest Products Development for Commercialization", 9/01 – 6/03, $255, 345.

N. Nelson, C. Edwardson and **A. Goyal,** PD, USDA-CSREES, "Forest Products Innovation and Commercialization", 7/00 – 6/02), $226, 682.

R. Sterner and **R. Hicks,** (Co-PI), University of Minnesota, "LiMNology: A Virtual center for Limnology at the University of Minnesota", 9/00 – 8/02, $100,000.

R. Hicks, M. J. Sadowsky and L. B. Johnson, Minnesota Sea Grant College Program, **"**Identifying the Sources of Coliform Bacteria in Coastal Ecosystems and Their Relationship to Land Use; 2/01 - 1/03, $95,460.

R. Hicks, University of Minnesota Bush Sabbatical Supplement Award, "Identifying the Sources of Coliform Bacteria and Their Relationship to Land Use", 7/01 – 6/02; $15,514.

T. Hrabik et al, EPA-Star Grant; (added as collaborator after proposal submitted), "Great Lakes Environmental Indicators, Fish and Invertebrate Sub-Project", 2001 – 2004; $894,000.

T. Hrabik (PI) and **A. F. Mensinger** (Co-PI), "Foraging of Exotic and Native Age-O Fishes: Combining Feeding Characteristics with Spatially Explicit Modeling of Habitat Quality to Assess the Impacts of Climate Change", Minnesota Sea Grant, $5,000.

M. R. Karim, et al, Sea Grant College Program, "Isolation of *Mycobacterium marinum* and other Pathogens from Water and Fish Populations of Different Lakes, 7/00 – 12/01.

M. R. Karim and B. Clarke, Dept. of Health and Human Resources, "Initiative for Minority students: Bridges to Baccalaureate", 7/01 – 6/04.

A.R. Klemer (Assoc PI), M. Mageau, R. Lichty, J. Skurla and W. Fleishman, Northeast Regional Sustainable Development Partnership, "The Iron Trail Assessment Project", 12/1/2001 - 11/30/2002, $36,633.

A. F. Mensinger (Co-PI) and S. Highstein, National Institutes of Health, "Neural Mechanisms of Hearing and Balance", 1999 – 2004, $25,000.

A. F. Mensinger, Minnesota Sea Grant, "In-situ Biosensors for Monitoring Fish Physiology and Behavior", 2/01- 1/03, $66,000 plus graduate student fellowship.

A. F. Mensinger, University of Minnesota Visualization and Digital Imaging Lab, "3-D Reconstruction of Regenerating Lateral Line Nerves", Summer Grant, 2001, $2,000.

M. J. Oursler, U.S. Department of the Army, "Mechanisms of Transforming Growth Factor Beta Regulation of Tumor Progression in Metastatic Cancer", 10/1/00 – 9/30/03, $322,754.

G. Niemi , R. Axler, J. Hanowski, G. Host, **T. Hrabik**, L. Johnson, C. Johnston, J. Kingston, **C. Richards,** U. S. EPA, "Development of Environmental Indicators of Condition, Integrity and Sustainability in the Great Lakes Basin", 2001 – 2005, $6,000,000.

G. Niemi (Co-PI), C. Johnston and P. Wolter, NASA, "Development of Environmental Indicators for the U.S. Great Lakes Using Remote Sensing Technology" 2001 – 2005, $600,000.

G. Niemi (Co-PI) and J. Hanowski, Minnesota Legislative Commission on Minnesota Resources, "Effects of Changes in the Forest Ecosystem on the Biodiversity of Minnesota's Northern Forest Birds", 1991-2003, $2,111,750.

J. Hanowski and **G. Niemi** (Co-PI), North Central Forest Experiment Station, Chippewa National Forest, Superior National Forest, USDA Forest Service and US Fish and Wildlife Service, "Monitoring Bird Populations in Minnesota's National Forests", 1991 – 2003, $297,360.

G. Niemi (Co-PI) and B. Mattsson, US Fish and Wildlife Service and MN Department of Natural Resources, "Relationships between Multi-scale Habitat Features and Breeding Biology of Forest Songbirds", 2000 – 2002, $17,800.

J. Hanowski and **G. Niemi** (Co-PI), USDA Forest Service, NC Research Station, "Testing Efficacy of Buffers and Residual Trees at Protecting Seasonal Ponds and Forest Songbirds", 1999 – 2002, $36,000.

G. Niemi, USDA Forest Service and MN Department of Natural Resources, "Boreal Owl: It's Habitat and Prey in the Superior National Forest", 1999 – 2002, $130,000.

G. Niemi , USDA Forest Service , MN Department of Natural Resources and US Fish and Wildlife Service, "Distribution of Canada Lynx in the upper Midwestern United States", 1999 -2002, $77,000.

S. Bridgham, **J. Pastor** and J. Chen, National Science Foundation, "Carbon and Energy Flow and Plant Community Response to Climate Change in Peatlands", 1997-2001: $1,380,889.

J. Pastor, Y. Coen, R. Moen and B. Dewey, National Science Foundation, "Moose Population Cycles, Ecosystem Properties and Landscape Patterns on Isle Royale", 1998-2003, $300,000.

J. Pastor and P. Wolter, NASA, "Mapping and Modeling Forest Change in a Boreal Landscape", 2000-2003, $349,841.

C. Richards (Co-PI), A. Hershey, J. O'Brien, C. Lucke and S. Whalen, National Science Foundation, "A Geomorphic Trophic Hypothesis for Arctic Lake Productivity", 2001 – 2004, $1,200,000.

C. Richards (Co-PI), P. Munson, R. Axler, C. Hagley, G. Host and G. Merrick, (UMD Education Dept., NRRI, Sea Grant and LSC), NSF – ATE, "Training Water Science Technicians for the Future - A National On-line Curriculum Using Advanced Technologies and Real-time Data", $600,000 to UMD and $200,000 to Lake Superior College.

J. Schuldt, L. Johnson and **C. Richards,** U.S. EPA STAR Program, "Protocols for Selecting Classification Systems and Reference Conditions: A Comparison of Methods, 3/01 – 2/2004, $747,404.

Recent Faculty Publications

Bauer, V.W., Squire, T.L., Lowe, M.E., and **Andrews, M.T.** 2001 Expression of a chimeric retroviral lipase mRNA confers enhanced lipolysis in a hibernating mammal. *Am. J. Physiol.* 281, R1186-1192.

C.M. Belk and **Borden, V.M.** 2001. *The Second X: The Biology of Women* 2nd edition, Harcourt College Publishers. [Book]

Belk, C.M. and **Borden, V.M.** 2001. *Biology: Hits on the Web*, Harcourt College Publishers [Textbook supplement; annotated list of URLs]

D. K. Branstrator and C. M. Holl, 2001. Planktivory by bluegill (*Lepomis macrochirus*) on *Leptodora kindti* in a small North American lake. *Hydrobiologia* 437: 101-106.

Ghoshal, D. and **A. Goyal** 2001. Oxygen inhibition of dissolved inorganic carbon uptake in unicellular green algae. *Phycological Research* 49: 319-324.

Ghoshal, D., D. Mach, S. Gupta and **A. Goyal.** 2001. Chloroplastic glyceride isoform of dihydroxyacetone phosphate reductase from *Dunaliella tertiolecta :* Purification and characterization. *J. Plant Biochem and Biotech* 10: 13-120.

Pundsack, J., R. Axler, **R. Hicks**, J. Henneck, D. Nordman, and B. McCarthy. 2001. Seasonal pathogen removal by alternative on-site wastewater treatment systems. *Water Environ. Res.*: 73:204-212.

Hrabik, T. R., M. P. Carey and M. S. Webster. 2001. Interactions Between Exotic Rainbow Smelt Young-of-Year and Native Yellow Perch Young-of-Year in a Northern Temperate Lake. *Transactions of the American Fisheries Society* 130:568-582.

Greenfield, B.K., **T.R. Hrabik,** C.J. Harvey, S.R. Carpenter and T. K. Kratz. 2001. Predicting mercury levels in fish: use of water chemistry, trophic ecology, and spatial traits. *Canadian Journal of Fisheries and Aquatic Sciences* 58: 1419-1429

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Graduate Student Commencement

by Charlene Johnson

Graduate students at the University of Minnesota are able to graduate during any month of the year, as soon as the final requirements for the degree are completed and to apply for graduation through the Graduate Student Office on the UMD campus. The commencement ceremony, however, is held only once per year. Beginning in 2000, Graduate Student Commencement is held as a separate event from the Undergraduate Commencement, in the Romano Gymnasium on the UMD Campus. The 2001 Graduate School Commencement Address was given by Dr. Tom Johnson, Director of the Large Lakes Observatory.

Since last press, the Biology Department proudly awarded the following students the Master of Science degree in Biology:

Fred Asar
Michael Scott
Brady Mattsson
Matthew Thompson
Anne Ellen Lacy
Mary Kay Karst
Antoinette Lamkin
Brendan Keough
David Vandermuelen

Graduating Graduates 2001-2002

by Charlene Johnson

Graduate students recently departing the Biology Department have taken a variety of paths out on their own. Some have pursued academia, while others have ventured toward research and policy. Some have traveled far; from coast to coast, others closer than we think. A few, who have kept in touch, are profiled below.

Brendan Keough officially left us February 2002. Originally from Wausau, Wisconsin, Brendan graduated from Marquette University in Milwaukee, Wisconsin and moved on to the UMD campus in December 1997. His thesis, under the direction of Dr. Randall Hicks, was titled "Archaeal nucleic acids in picoplankton from Great Lakes of the World". This project focused on investigating the microbial diversity in picoplankton assemblages in great lakes on three continents using 16S rRNA based molecular techniques. Currently, Brendan is a research assistant at Michigan State University in East Lansing, Michigan. He is conducting genomic analyses of soil microbial communities.

Mary Karst, now residing due south of us in Texas, received her M.S. in Biology in August 2001. Mary studied under the wing of Dr. Merry Jo Oursler and presented her research on "The effects of transforming growth factor beta on osteoclast differentiation" in July 2001. Mary is currently pursuing a career in academia in Lake Jackson, Texas at Brazosport College, a community and technical college, where she is teaching biology. She is considering pursuing her Ph.D. in a few years. Mary was supported during her graduate work at UMD as a graduate teaching assistant, and was awarded for her efforts in 2000 by receiving the Outstanding Graduate Teaching Assistant Award.

Matt Thompson received his M.S. in Biology in June 2001 after defending his thesis entitled "Comparative effects of Betulin and Allobetulin-lactone on Herpes Simplex Virus Type II - infected VERO cells". Matt was supported as a TA while doing his graduate research and taught and coordinated a number of laboratory courses, including General Biology I and II, Biochemistry and Molecular Biology, Microbiology, Histology, and Animal Diversity. Matt says that his time at UMD as a graduate student was a mixture of fun and tough work. "The one aspect that I enjoyed about my time at UMD was interacting with my undergraduate students. Above all, they made my experience enjoyable". Matt remains a familiar face at UMD since he was accepted to the University of Minnesota Medical School on the Duluth Campus where he serves as class president.

Continuing Graduate Students

by Charlene Johnson

The lives of many of the graduate students we heard about in last year's *Life Scientist* continue to evolve as their research nears an end and they prepare to move on to the next stages of their lives. For some this time is near, for others, graduation may be a bit further in the future.

Dr. Randall Hicks' lab is still alive with the sounds of **Matthew Olson** and Jennifer Schreiber, sorrowed by the graduation and subsequent loss of their mentor**,** Brendan Keough. Matthew has collected most of the data he needs and is running experiments to determine the efficiency of virus removal in alternative wastewater treatment systems. He continues teaching to support his research, as Dr. Raj Karim has him teaching the microbiology laboratory. Matt is planning his escape, er, graduation, by the end of summer 2002, but also hopes that his future career might bring him back to the area someday.

Jennifer Schreiber, however, doesn't see the end quite so near. Her research on the viability and invasiveness of *Salmonella typhimurium* in aquatic environments continues to keep her busy. Jennifer has spent much of the last year experimenting with different culturing techniques, but now with much of the prep work resolved, she is planning to use rolling microcosms to simulate a natural aquatic environment in which to grow S*almonella* cells. The microcosms will be sampled periodically and tested using several methods including direct microbial counts, fluorescent hybridizations, selective pour plates, and invasion assays. These analyses should help determine the relationships and changes over time in the total invasiveness and physiological states of S*almonella* when they are in an aquatic environment, such as the Duluth Harbor. Jennifer participated in the Sigma Xi poster exhibition and the Limnology 2001 Conference. Jennifer was supported last year as a research assistant in Dr. Hicks' lab, but has since moved to teaching. She enjoys teaching immensely and her plans for the future may include teaching at a community college. She hopes to wrap up her research here sometime in 2003.

Kari Dresback, Matthew Roforth, and **Ayuko Kassel,** continue to inhabit Dr. Arun Goyal's laboratory. Ayuko has changed her research focus to develop an efficient method for isolating high yields of physiologically and biochemically active mitochondria from the protoplasts of poplar trees. Hopefully, she says, she'll finish her research and defense sometime in the summer of 2002. She presented a poster of her research at the Sigma Xi poster exhibition this year.

Matthew Roforth is nearly ready to defend his thesis on the "Effects of glucocorticoids on the replication of herpes simplex virus-1" by the end of spring. Matthew has been busy as a teaching assistant and coordinator for General Biology I in the past and moved into the General Biology II lab this spring. He has also presented posters the last two years at the annual Sigma Xi poster exhibition at UMD. Upon leaving us, he'll seek a job as a director of research and development, but will try to stay out of politics.

Mark Paulson can still be found between the UMD Medical School, where his laboratory is located, and the General Biology II lab, where he is a teaching assistant. Mark's research deals with TRH derivatives, in relation to chronic stress and the immune system. Mark plans to wrap up his research here in spring 2002 and move on to pursue his Ph.D.

Michael Callahan has switched his research focus to VIIth nerve regeneration in the channel catfish, *Ictalurus punctatus*. The purpose of this study is to determine the rate of nerve regeneration in the channel catfish. He accomplishes this with surgical procedures that open the skulls of catfish, transecting the VIIth nerve, and then repairing the skull. Over the course of three months, fish will be removed, the skull re-opened and the seventh nerve labeled with neurobiotin to determine state of regeneration. Control fish will be examined before work on the experimental animals begins. Mike continues to teach to support his research, and has been a laboratory instructor for Animal Physiology and Biology and Society this last year.

Christie Miller is ready to wrap things up in 2002 with her research on the effects of anthropogenic development on bird community species composition at the landscape level. Her research data is part of the upland birds portion of the Great Lakes Environmental Indicators Project (GLEI). Data collection involved 10-minute point counts of birds in various communities along the coastal upland shores of Lake Superior. The goal of her project was to describe the changes in bird communities along a developmental gradient. Christie is a veteran laboratory instructor and coordinator for General Biology II and hopes to take this experience with her as she seeks a future teaching at a community college.

Lisa Belmonte is hoping to finish her graduate work on the habitat characteristics of boreal owl breeding sites in northeastern Minnesota this spring. She was featured on "Venture North," a public television program, this last year regarding her research utilizing telemetry to track boreal owls in their habitats. Lisa's graduate studies have been supported, in part by a teaching assistantship for classes in Human Anatomy and General Biology.

Jennifer Milan, under the direction of Dr. Lucinda Johnson at NRRI, has been developing and collecting data for her research project determining the effect of various levels of vegetation on the exposure of tadpoles to UV radiation. Jennifer also wants to determine the effect of egg mass placement on the dose of UV radiation that the eggs receive during development. Her research is part of a larger project looking at the effects of habitat fragmentation on amphibian populations. Jennifer is supported as a research assistant in Dr. Johnson's lab.

Christian Matson plans to leave the biology program upon graduation at the end of the summer 2002. He'll be ready to defend his thesis project on the upregulation of monocarboxylate transporters (MCTs) in the blood brain barrier in response to pentylene tetrazole (PTZ) induced seizures. He says that understanding the mechanisms of MCT expression control could lead to future therapies for MCT related disease. To support his research, Christian has spent the last two years as a teaching assistant for General Biology I. Upon graduation, he plans to move on to stocks and bonds.

Mark Pranckus is ready to wrap up his graduate career here at UMD with an M.S. degree. This spring he's finishing his final analyses, putting the last touches on his thesis and will be ready to present and defend his project on macroinvertebrates and woody debris in southeastern Minnesota streams. Mark presented papers at the Midwest Fish and Wildlife conference in Minneapolis in 2000 and also at the North American Benthological Society in LaCrosse, WI in 2001.

Chris Mrozinski can still be found in Dr. Andy Klemer's laboratory. She has been

(Continued on next page.)

New Graduate Students at UMD

by Charlene Johnson

New Graduate Students: Front Row, L to R: Michael Bourdaghs, Hazel Richmond, Kelsy Anderson; Back Row, L to R: Lucy Palmer, David Grandmaison, Adam DeWeese.

Lucy Palmer, from Melbourne, Australia, graduated from the University of Melbourne with a B.S. in Zoology and B.A. in Geography. She is currently working in Dr. Allen Mensinger's lab studying fish neurophysiology where she is supported as a research assistant (RA). Her thesis involves implanting microwire electrodes into the anterior lateral line and VIIIth nerve of channel catfish. She will record the neural signals via inductive telemetry from the fish while they are free swimming. The purpose is to determine if the nerve impulse from the fish is modified depending on the environmental stimulation. So far, Lucy has developed the telemetry tag and tank and begun performing live surgeries to implant the tags in the fish. She will be spending the summer 2002 conducting her research at the Marine Biological Laboratory in Woods Hole, Massachusetts. She plans to complete her M.S. in Biology in 2003 and move on to pursue her Ph.D. in neurophysiology. Her career goals lie in either academia or independent research back home in Australia.

Hazel Richmond, another newcomer to UMD, also works in Dr. Mensinger's lab. Hazel hails from Falmouth, Massachusetts and received her B.S. Biology at the University of Massachusetts in Amherst. Hazel is also studying the physiology of fish, but seeks to quantify the foraging behavior of larval smelt and perch to determine what types of feeding advantages smelt might have over perch. This data will be used in foraging and bioenergetics models that predict growth of fish in laboratory experiments. She plans to spend summer 2002 conducting her research between the Trout Lake Field Station in Wisconsin and at the Marine Biological Laboratory at Woods Hole, Massachusetts. She hopes to wrap up her graduate work in 2003. This year, Hazel was supported by a graduate teaching assistantship and taught laboratory courses in General Ecology and Animal Diversity.

Michael Bourdaghs is not new to UMD, but is new to the graduate program. Mike is from Stillwater, Minnesota and received his B.S. Biology in 1999 from UMD. He has spent some time working nearby at the University of Minnesota Natural Resources Research Institute. The focus of his graduate research is in the realm of plant ecology, more specifically, evaluating the concept of the Floristic Quality Assessment Index (FQAI). This index ranks plants according to their ecological role in a plant community and must be tailored regionally. Mike's research will focus on evaluating the FQAI against other quantitative and objective measures of plant community health in Great Lakes coastal wetlands and is part of the larger Great Lakes Environmental Indicators Project. Mike is supported as a research assistant through this project and his advisor, Dr. Carol Johnston. After graduate school, Mike plans to continue working with wetland management and to play a role in making wetland policy decisions.

Kelsy Anderson, originally from Ely, Minnesota, graduated from the University of Minnesota Morris with a B.A. in Biology. Kelsy is studying the distribution patterns of muskellunge (*Esox masquinongy*) under the advisement of Dr. Tom Hrabik. Her thesis, titled "Habitat and Prey Selectivity of Muskellunge in Island Lake Reservoir", involves tagging and tracking several fish and making predictions about where these fish move, based on substrate type, macrophyte cover, and association to deep water. Kelsy's research also attempts to determine the prey selectivity of muskellunge by examining their gut contents and comparing them to the available prey found in the reservoir. In 2001-2002, Kelsy was supported as a TA, teaching lab courses in General Ecology and Biology and Society. Kelsy's summer will be spent at the Island Lake Reservoir seeking out her experimental units. She hopes to wrap up her work here in 2003 and then move on to doctoral research at the University of Wisconsin in Madison.

Damon Krueger joins the UMD graduate students from the University of Wisconsin, Madison where he received his B.S. in Wildlife Ecology. His current research, advised by Dr. Tom Hrabik, focuses on fisheries ecology and management. His thesis deals specifically with exotic species interactions with native fishes in the Bear River watershed in Vilas County, Wisconsin. This project tests two methods of improving the negative effects of exotic smelt on native cisco. One method involves selective predation on smelt by walleye, which allows ciscos to increase in number. The second method involves artificial propagation of ciscoes in a hatchery setting. His hypothesis is that if ciscoes are released into the wild at a size greater than the smelt gape limit, the cisco will survive and outcompete the smelt for food. Damon plans to defend his thesis, tentatively titled "Mitigating the negative effects of exotic rainbow smelt (*Osmerus mordax*) on native populations of lake herring (*Coregonus artedii*) in the Bear River Watershed - Vilas Co., Wisconsin" next May. He plans to continue his research at the Trout Lake Biological Station in Wisconsin. Damon presented posters at the Sigma Xi Poster Session at UMD and at the Limnology 2002 conference in April. His research has been supported by both research and

(Continued from page 9.)

teaching in General Ecology labs, Biology and Society labs and is involved in foster care for unloved cats in the area.

As for me, **Charlene Johnson**, I have been sorting through the complex web of trying to determine the "Potential vegetative composition of a wetland created from dredged material in the Duluth-Superior Harbor" under the advisement of Dr. David Schimpf. I will be running my last experimental set this summer and incorporating that data into the seedling results, soil and sediment analyses, and environmental reference data that has been compiled so far. I hope to finish my research and defense by the end of 2002. In the meantime, I still enjoy writing for the *Life Scientist* and awaiting the arrival of a little one in April! [Editor's note at press time: Charlene and her husband are the parents of a son, Alex, born in mid April].

teaching assistantships. Damon also has an active personal life. He loves football, biking, and aquariums and is especially fond of his four reef fish, who wish to remain otherwise anonymous.

Adam DeWeese comes to us from University of Tennessee in Knoxville where he received his M.S. in Ecology and Evolutionary Biology. He is currently pursuing his Ph.D. from the Water Resource Science program at the University of Minnesota twin cities campus. His thesis research, advised by Dr. Andrew Klemer, will focus on cyanobacteria domination in freshwater ecosystems. He hopes to complete his research by spring 2004 and move back into the field of environmental protection with the state or federal government. Adam is supported as a teaching assistant for General Biology I in UMD's Biology Department.

David Grandmaison, a native of Duluth, graduated from St. John's University where he received his B.S. in Natural Science. Dave is under the advisement of Dr. Gerald Niemi and is working on a project involving landscape indicators of wetland bird productivity. Dave's research is designed to take advantage of the sensitivity birds have to track environmental change. Dave says that the "rapid pace of development and fragmentation along the coastal regions of the Great Lakes is likely to have negative consequences for many avian species". Dave's research proposes that these sensitive bird species can be used as indicators of the overall health of an ecosystem. His research will assess avian productivity, a surrogate for ecosystem health, by developing a suite of landscape metrics that will identify spatial configurations that may have negative consequences to bird nest productivity. The fieldwork involves examining landscape patterns of nest predation and potential predator assemblages in coastal wetlands along a range of environmental conditions, including patch size, patch isolation, anthropogenic land use, cover type, and road density. In the end, Dave hopes to determine which of the measurements are most useful as indicators of ecosystem health. While it may sound like Dave is in for the long run, he plans to complete his research by spring 2003. In the meantime, he is supported as a teaching assistant in the Biology Department, teaching laboratories and coordinating for General Ecology and Biology and Society.

Brendan Keough, Outstanding Graduate Student Award winner, poses with Dr. Steve Hedman, Assoociate Dean of the Graduate School.

Outstanding Graduate Teaching Assistant Awards

by Charlene Johnson

Each year the College of Science and Engineering honors outstanding graduate teaching assistants from its member departments. For 2000-2001, the Outstanding Graduate Teaching Assistant Award in Biology was granted to **Brendan Keough**. **Mark Pranckus** also received a departmental special recognition award as a Graduate Teaching Assistant. For the academic year 2001-2002, **Ayuko Kassel,** was recently honored. A complete article on Ayuko will be part of the next issue.

Brendan Keough, who received his Master of Science in Biology from UMD in February 2002, taught sections for Animal Biology, Animal Diversity, Microbial Ecology, and General Microbiology to support his research as a graduate student. Brendan remembers that his teaching experience had both ups and downs. He says that Animal Biology and Diversity were the most fun to teach, but notes that the first time he taught Microbiology, it was very time intensive and frustrating. When asked if he would consider teaching as part of his future career, he replies "Possibly, but that is yet to be determined". Currently, Brendan is a research assistant at Michigan State University in East Lansing, MI.

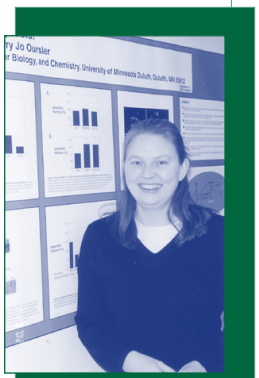
Mark Pranckus has been teaching since fall 1998 and has taught labs and coordinated courses in Evolution, General Ecology Lab, Plant Biology, Biology and Society, and Ichthyology. About his teaching experience at UMD, Mark says, "I've had the opportunity to teach Biology majors and freshmen non-majors. They represent different but equally interesting challenges. Biology majors push your level of understanding of a subject you feel you know fairly well. With non-majors who tend to run kicking and screaming from a biology class, the challenge is to present a subject that you are passionate about in a manner that encourages a greater level of appreciation on their part." Mark's most rewarding aspect of being a teaching assistant lies in getting to know the students one-on-one. "It's made me feel a part of the (student) community when I see them out at the grocery store or a restaurant."

Sigma Xi Sigma Xi Sigma Xi Sigma Xi

by Stacy Johnson

Founded in 1886, Sigma Xi, a non-profit scientific research society, has a membership of nearly 75,000 scientists and engineers who were elected to the Society because of their research achievements or potential. There are more than 500 Sigma Xi chapters at universities and colleges, government laboratories and industry research centers. The UMD Chapter officers this year are Raj Karim, President; Arun Goyal, President-Elect; Bob Cormier, Secretary; and Jean Regal, Treasurer.

The Eighteenth Annual Scientific Poster Exhibition had almost thirty posters displayed in the Medical School Atrium February 18-22, encompassing the disciplines of Computer Science, Electrical and Computer Engineering, Biochemistry and Molecular Biology, Pharmachology and Physiology, Medicine, Chemistry, and Biology. Awards were given to Nabamita Basak for best undergraduate poster, Aubie Shaw for best graduate student poster, and Tim O'Brien for best faculty/post-doctoral poster.



Aubie Shaw and her prize-winning Sigma XI poster.

Matt Olson, Biology graduate student, was the Student 2002 Poster Session Chair. He was responsible for advertising the session, compiling the abstracts with Dr. Goyal, and together with Matt Roforth, setting up and removing poster boards after the exhibition.

The poster titles submitted from the Department of Biology were as follows.

"Isolation and Characterization of Mitochondria from *Populus* Protoplasts". Ayuko Kassel, Durba Ghoshal, and Arun Goyal.

"Effects of Glucocorticoids on the Replication of Herpes Simplex Virus Type 1 (HSV-1)". Matthew Roforth and Arun Goyal.

"TNFα-mediated apoptosis in osteoclasts is driven by caspases". A.K. Shaw and M.J. Oursler.

"Mechanisms Controlling Osteoclast Apoptosis". Aubie Shaw, David Pascoe, Cecilia Giulivi and Merry Jo Oursler.

"Divergent Apoptotic Mechanisms in TGF-ß Induced MOCLs". Anne Gingery, Aubie Shaw, Mary Karst, Jon Holy and Merry Jo Oursler.

"Seasonal Virus Removal from Alternative Wastewater Treatment Systems". M.R. Olson, R. Axler, R. Hicks.

"Mitigating the negative effects of exotic rainbow smelt (*Osmerus mordax*) on native populations of lake herring (*Coregonus artedii*) in the Bear River watershed Vilas Co., Wisconsin". Damon M. Krueger.

"Viability and Invasiveness of *Salmonella typhimurium* in an Aquatic Environment". Jennifer A. Schreiber and Randall E. Hicks.

"Computer-assisted Histomorphometric Analysis of the Influence of Aluminum Toxicity on Embryonic Bone Calcification". Ryan.Q. Hankins, Shawn M. Lavelle and Conrad E. Firling.

Undergraduate Commencement

by Stacy Johnson

UMD's 101st Undergraduate Commencement was held on Saturday, May 12, 2001 at the Duluth Entertainment and Convention Center. The commencement address was delivered by Judge Gerald W. Heaney, one of northern Minnesota's most prominent citizens, who made immense contributions to the region and to the state during more than 50 years of public service. The commencement bulletin lists over 1,280 students as candidates for graduation. The list of Biology degrees conferred includes those completing graduation requirements Fall 2000, Spring 2001, and Summer 2001. Spring 2002 commencement will be featured in the next issue of the ***Life Scientist.***

B.S. Biology

Jeffrey T. Anderson
Emily A. Beekmann
Brandon M. Barnes
Gerald S. Buntin
Lina M. Castilla
Nicholas M. Caven
Joseph A. Colling
Gina M. Copiskey
Emily S. Dold
Elise M. Doucette
Jessica M. Drilling
Jenny M. Fearn
Benjamin G. Felty
Jasmine S. Folger, Cum Laude
Nicole A. Foster
Christopher J. Gamache
Samuel M. Gadzichowski
Nicole L. Gilles
Benjamin A. Hess
Leslie M. Hoffman
Paul T. Honmyhr
Julie R. Jacobs
Jacob J. Janski
Aaron B. Jennissen
Ryan F. Kiefer
Kari L. Lasman
Mandy K. Lawyer
Barbara E. Lester
Ryan J. McCarty
Crystal M. Meek
Shawn T. Meyer
Andrea J. Michael
Benjamin L. Mitlyng
Frank M. Modich
Daniel J. Munt
Nathan G. Nelson
Jenny L. O'Malley, Cum Laude
Cale W. Pennings
Benjamin K. Phipps, Magna Cum Laude
Stacy M. Scowcroft
Brandon R. Seitz
Cami Jo Sorenson
Heather A. Staffon
Ryan S. Thiers
Anna C. Varner
Kenneth J. Waldvogel
Tara L. Wozniak
Heather L. Zahn

B.S. Cell Biology

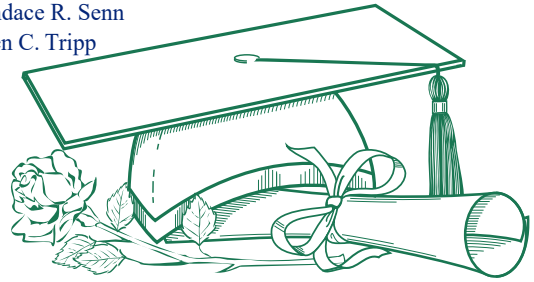
Elizabeth W. Bradley, Cum Laude
Crystal A. Grund
Sharon L. Kunkel
Frank M. Modich
Randy L. Olson, Magna Cum Laude
Candace R. Senn
Ryen C. Tripp

B.A. Biology

Peter A. Anderson
Matthew J. Kocian
Jana J. Reed
Patrick D. Stangl

B.A.S. Teaching Life Science

Leslie M. Hoffman
Rachel R. Barr
Elisabeth M. Brown
Shanna L. Darkow
Drew R. Keto
Carol J. Klinker
Heather E. Nissen
Shawn G. Perkins
Dennis J. Weaver
Bryan M. Weghorn



T.O. Odlaug Award

by Rebekah Bolstad

Megan Gladen and Anna Varner

The T.O. Odlaug Award is given out each year in honor of former Professor and Biology Department Head, Dr. Theron O. Odlaug. The award is bestowed on an outstanding biology student who shows strong leadership qualities and service to the department. The award is a reference book of the recipient's choice. This year the award was given to two students, **Megan Gladen** and **Anna Varner**.

Anna Varner graduated in spring of 2001 with a B.S. in Biology, and has spent the past year working in home health care. She has been accepted into a physician's assistant program at the University of Wisconsin beginning in June, 2002. Megan Gladen is currently in her last semester at UMD. She will graduate this spring with a Bachelor of Science degree in Cell Biology. After graduation, she will defer for a year, and then attend the UMD School of Medicine, where she has already been accepted. Gladen on her years at UMD: "I've had a great time at UMD. The biology department is wonderful, and I've enjoyed working with the faculty and other students. Living in the microbiology lab for the past year has definitely been interesting. I really feel my studies here have prepared me for medical school."

Outstanding Freshman Biology Award

by Tara Hoff

The Outstanding Freshman Biology Award is given to an incoming freshman who excels in the introductory biology courses, Biol 1011 and Biol 1012. The criteria for this award are based on the total number of points earned in the lecture and lab portions of the two courses, and a recommendation by a teaching assistant. The student must have an enthusiastic attitude about biology, show leadership, and have a good understanding of the general concepts. This year's winner was **Bobbi Jo Eckel** from Long Prairie, Minnesota. She received an award and $100 for her achievements.

Bobbi Jo is double majoring in Biochemistry and Cell Biology. She hopes to attend veterinary school, specializing in large animals. Her favorite animal is the cow! She also enjoys working on her family farm raising beef calves. Currently, Bobbi Jo is a chemistry tutor and she plans on pursuing a research project in chemistry this summer. Congratulations, Bobbi Jo!

Turcotte Scholarships

by Breanna Hoff

Edgar (Ed) L. Turcotte and Alma M. Mattson grew up on adjoining farms near Wrenshall, Minnesota, in the early 1900s. They attended a country school near their homes, where they received formal education while assisting on their parents' farms. Ed left home for training as an auto mechanic, and Alma attended a business school in Duluth. They were married in 1928 and lived in Carlton, Minnesota, with their three sons and two daughters, all of whom attended the University of Minnesota Duluth (UMD) after graduating from Carlton High School. Alma passed away in 1988 followed by Ed in 1992. This scholarship is dedicated to their memory with profound respect and everlasting love. Two one thousand dollar scholarships are awarded annually to motivated and high-achieving biology and cell biology majors who demonstrate financial need.

This year's winners of the Turcotte Scholarships were **Katherine Carlson** and

Beth O'Brien, Turcotte Scholarship winner.

Beth O'Brien. Katherine Carlson is a senior and will graduate with a Biology major and two minors – Chemistry and Art. She hopes to get into Veterinary School at the University of Minnesota – Twin Cities next year. She is also interested in education as it relates to the natural sciences as an alternative career choice to veterinary school. At UMD, she was involved in choir and aerobics classes. She also enjoys traveling, drawing, sculpting, and keeping animals in her spare time. Katherine's picture was not available.

Beth is also a senior and will graduate in May 2002 with a major in Biology and a minor in Business Management. After college, she hopes to pursue a career in lake research with the DNR. She would like to use her business management background to manage laboratories and research projects. She hopes, after this experience, to return to college to obtain her master's degree. At UMD, Beth is involved in aerobics and is on an intramural soccer team. She also does volunteer work at the Soup Kitchen in Minneapolis and part time clerical work back home in Lakeville. Congratulations Katherine and Beth and good luck in your future endeavors!

Karim PreVetMed Award

by Eileen Harris

Kari Euteneuer is the recipient of the 2001 Karim Pre-Veterinary Medicine Award. To receive this award, the student must be a sophomore or a junior with at least a 3.4 GPA and must also have some experience in the veterinary field and a familiarity with animals. The student's work experience, extracurricular activities, leadership and community involvement are also assessed.

Kari Euteneuer receives her award from Dr. Raj Karim.

Currently a junior at UMD, Kari is a Biology major with a Psychology minor. She works at a veterinary clinic in Duluth part time and has also worked at veterinary clinics in the past. She likes animals a lot and enjoys the aspects of caring for them. This caring personality carries over into a possible future career of occupational therapy.

T.O. Odlaug Scholarships *by Megan Kingsley*

Ruth Hemming, Biology Department Executive Secretary, congratulates Ann Torborg and Sarah Huth, Odlaug Scholarship winners.

This is the second year that $1000 scholarships were awarded to two UMD biology students. These students must be in good academic standing and demonstrate financial need. The 2001 recipients were **Ann Torborg** and **Sarah Huth.**

Ann hails from St. Joseph, Minnesota, and will graduate this May (2002) with a Biology major and Psychology minor. She has been accepted to the University of Minnesota Veterinary School. Animal Diversity, Biochemistry, and Animal Physiology are her favorite UMD courses. Her hobbies include biking, camping, and water skiing. Some significant experiences Ann has had as a UMD undergraduate include being an Animal Diversity TA, the PreVet Club President, a member of the Best Buddies mentoring program, a UMD Admissions tour guide, a math tutor, and working at the North Shore Veterinary Clinic. She says that "being involved in the PreVet club enhanced my undergrad experience here at UMD. I made a lot of friends through the club and received a lot of guidance through our advisor Raj Karim and also older members in the club". If she could give any advice to incoming freshman or underclassman, it would be "To make sure to study hard and to stay focused, it may sound easy but its not! Also, to make friends with people in your classes because you will be with them for four years and can really make some great friendships! And, most important, HAVE FUN, or you will burn our very quickly!!"

Sarah is receiving the Odlaug scholarship for the second time. Hailing from Bloomington, Minnesota, she will be graduating this May with a Biology major and Chemistry minor. In her spare time she enjoys exercising, reading, shopping, and traveling. After graduation, Sarah plans to move to San Diego where she will work for a year before applying to medical school. Her favorite course at UMD was Biology of Women, but she also enjoyed being a supplemental instructor (S.I.) for Genetics and an undergrad TA for General Biology and Biology and Society. Significant experiences at UMD include SI genetics, an undergrad TA, being part of the PreMed Club, and traveling to Guam her sophomore year of college. She says the "PreMed club gave me a lot of information and helped me out a lot as far as preparing for medical school." Her advice to freshman: "Enjoy your time here; it goes by so fast. Study hard, it will all pay off in the end." Sarah would also like to give a special thanks to the Odlaug family, "The scholarship was extremely helpful and greatly appreciated."

The Barry M. Goldwater Scholarship *by Doug Schaff*

Katherine Stephenson and her mentor, Dr. Allen Mensinger.

The Barry M. Goldwater Scholarship foundation was established in 1986 by the United States Congress to honor Barry M. Goldwater, a soldier who served his country for fifty-six years, including thirty years in the United States Senate. The purpose of this scholarship is to encourage highly qualified scientists, who possess strong leadership qualities in the fields of engineering, mathematics, and science, to pursue a future career in academics and research. This is a national program where three hundred awards are given annually to undergraduate students who are juniors or seniors, and have displayed outstanding potential and career interests in mathematics, science, or engineering. Each scholarship covers eligible expenses for tuition, books, fees, and room and board, up to $7500 annually.

Kate Stephenson is one of this year's recipients of the Barry M. Goldwater scholarship. Kate is a Biology major who will be graduating this spring and is considering several options after graduation. A few of these options include graduate school for coral reef ecology, taking the MCAT and applying to medical school, or doing a Peace Corps masters program in public health. In her free time, she enjoys outdoor activities such as kayaking, skiing, camping, and scuba diving. Whichever direction Kate chooses, she would like to pursue a career where her compassion and knowledge of science will help others.

Senior Spotlight *by Megan Kingsley and Megan M. Gladen*

As entering freshmen, the next four to six years seem to stretch into the endless future. The final days do come, however. After braving general biology and chemistry and immersing themselves in the minutiae of the world about them, the freshman turn into seniors. These are seniors who are ready to partake of the endless opportunities laid out before them.

Megan KIngsley

"Do what you think is best for you," begins Megan Meade Gladen's sage advice to underclassmen. "Don't let others or other circumstances dictate what you do." For instance, Megan switched from biochemistry to do what she loves, cell biology, and so lost a scholarship. "Do what you want to do, not what is expected of you. Take courses you're interested in, like Late Roman and Medieval World". Besides her Cell Biology major, Megan is graduating with minors in Chemistry and Psychology. Her favorite UMD course was Immunobiology because "it was taught by peers as well as the professor." Married two years this August, 2002, to Derek Gladen, her hobbies include leisure reading (not textbooks!), hanging out with friends and her husband, and scrapbooking. Megan lists getting married as her most significant undergrad experience. It "changes your world 180º. You have to learn how to balance everything (school, personal, social, home) all over again, but [she had] great, constant support from Derek." Having worked on a UROP with her advisor, Raj Karim, she learned many research and lab skills. This lab experience

helped her further delineate "what I did and did not want to do in my life". Megan has been involved in several on-campus organizations such as pep band, Intervarsity, PreMed Club, and Biology Club. Being president of the Biology Club for the past two years has gotten her involved in the Biology Department with students and faculty. Having been accepted to the UMD medical school, she plans to defer for a year and then enter with the 2003 class. During her year off she wants to relax, work on her hobbies, and spend time with her husband. She looks forward to someday working as a family practitioner with a family of her own.

From Rapid City, South Dakota, **Lee Henry** is graduating this May with a Biology major and Chemistry minor. He cites Animal Physiology (live animal dissections!) and Ichthyology (high interest in fish) as his favorite courses. An adventurous outdoorsman, Lee enjoys fly-fishing in mountain rivers and alpine lakes as well as traveling. His favorite places in the world are the Canadian Rockies and Ireland. Some day you may find him clambering about the Alps, either downhill skiing, rock/ice climbing, or kayak touring. Lee explains that kayak touring is "like backpacking, but you don't have to walk anywhere." As a less athletic hobby, he enjoys landscape and sport photography. His future plans are to "recreate for a year" and then go back to school for a masters in fish ecology. His advice to underclassman: "Don't take all your easy classes right away. 'Cause that way you can save them for your later years."

Megan Kingsley of Waseca, Minnesota, will graduate this spring after a busy five years. She is double majoring in Biology and English. Appropriately enough, her favorite classes were Shakespeare and Biochemistry. Megan explains, "Every time I read a work by Shakespeare, I get something new out of it. I enjoyed biochemistry because it finally tied together all my earlier classes…and made me see how I could apply it to the real world." She also enjoyed her experiences as a writing tutor and an SI (Supplemental Instruction) genetics instructor. One of her favorite memories of SI is the night she taught cell division using pipe cleaners: "We got down on the floor and constructed the cell at various stages of mitosis and meiosis." Megan's most significant experience in the last five years, however, was studying abroad in Ireland during her sophomore year. She relates, "I learned a lot about the country, the people, and the customs. I even learned to play the tin whistle! My ancestors were from Ireland, and so it was kind of a coming-home." Megan plans to work in Washington state this summer and then enter a medical technician or R.N. program, after which she will apply to medical school. She'd also like to train horses on the side. Her advice to underclassman? "Don't take all the hardcore science classes at once; always take at least one 'fun' course. Establish good study habits early and use the library. Always take time for yourself – don't get too stressed out. Study abroad!"

With a Biology major and minors in Psychology and Chemistry, **Venu Nayar** plans to take a year off while she looks into law school, possibly becoming a district court judge. Venu has learned much from her undergrad experiences. From working on a UROP (undergraduate research opportunity program) grant, she learned that research is not her forte. Extensively involved in UMD SERVE since she was a freshman, it has been her "anchor in this campus because of the people and volunteer experience. Through holding various offices up to senior director, I have learned how to run an organization and manage/work with others and give back to the community." When asked what her favorite classes at UMD have been, Venu laughs when she lists Microbiology due to the memorable Dr. Karim, who is also her advisor. She has also enjoyed Billy Bernard's stories in Jazz Studies, but Philosophy of World Religions is her absolute favorite. This course, taught by Dr. Torgerson with various guest lectures, piqued her interest in analyzing and learning about religion. Venu's advice to underclassman is: "Make solid relationships with professors early. Get involved in research and/or a couple of clubs/ organizations. You'll learn a lot. Also, learn from your peers. And, most of all, RELAX!!!"

Joe Olson served as president of the PreMed Club this last year as well as working in the Surgical Services Department at SMDC (St. Mary's Duluth Clinic). His leading role in the club enhanced his undergrad experience because it gave him "a chance to interact with healthcare professionals and gain insight into the different aspects of the medical field". Besides keeping ahead of the coursework for his Biology major and Chemistry minor, Joe enjoys playing basketball and guitar, skiing, hiking, and hanging out with his friends. After graduation, he will be moving out to Seattle, Washington, with friends and work. Sometime after that he will apply to medical schools in both Washington and his home state, Minnesota. When asked what his favorite courses at UMD were, Joe responds, "I say it's a toss up between Animal Behavior with Dr. Pastor or Animal Physiology with Dr. Mensinger." While he would suggest to others to work in the surgery department at SMDC because "you get to see some crazy things", his advice to the less adventurous freshman would be to "keep a good balance between friends and school work, because college is not all about studying."

Hiking, biking, fly-fishing, running, playing guitar, and reading are **Kevin Raasch**'s various hobbies. This laid-back Biology major has minors in Chemistry and Environmental Studies. His favorite courses at UMD include Animal Diversity, First Aid, Stream Ecology, and Issues in Global Ecology. This Hastings native has met many good friends by being involved in intramural sports like ultimate frisbee, bowling, and softball. Kevin has already signed up with the Peace Corps for a two-year stint starting this September 18th, 2002. He hopes to be sent to Africa. After his mind-widening experience there, he may apply to the University of Minnesota School of Veterinary Medicine where he would like to specialize in exotic animals. He smiles when he says he wants to work with big cats, particularly the liger (a tiger-lion hybrid). His advice to freshman is: "Establish good study habits early; find a sanctuary; everything in moderation; [and] go to class."

"You have brains in your head.
You have feet in your shoes.
You can steer yourself
any direction you choose."
-Dr. Seuss

Biology Club Officers: Front Row, L to R: Megan Gladen, Co-President; Megan Kingsley, Treasurer; Julia Matson, Undergrad Representative; Back Row, L to R: Carrie Quast, Co-President; Eileen Harris, Director of Membership Activities; Jen Koenig, Secretary.

Biology Club "Where the Wildlife is"

by Jennifer Koenig

The mission of the Biology club is to provide an opportunity for students to meet others with similar interests, organize extracurricular activities for our members, and give students an opportunity to develop relationships with faculty members. Our club contains a well-rounded blend of members with an eclectic mix of life science based majors and preprofessional programs.

Throughout this year, many activities made the Biology Club an adventurous organization to be a part of, and our slogan, "Where the Wildlife is", is more fitting than ever. As a kickoff for the year, we packed up our gear and headed to Gooseberry Falls for an exciting camping trip, which turned out to be a very fun, very rainy experience. We've made one trip to the OMNIMAX theater to view Shackelton's Antarctic Adventure, and plan to make another trip there this spring. We're currently involved in a clean-up project for the department, involving the renovation of the display cases that have been the same for eons, or so it seems! Excitement is also building among the members because there are plans of trips to the local aquarium, picnics for the biology faculty and club members, a graduate school panel, and yet another fantastic Earth Day seminar, thanks to the help of Professor Arun Goyal.

Funding for this club is provided by the members' baking abilities, as we make cookies every week for the various seminars held here at UMD. In the fall, we also did caramel apple sales to help out the program, something of which even non-science majors were appreciative. Our next event will be our T-shirt sales, so keep your eye out for our new logo!

Biology Club officers for the 2001-2002 school year are: Megan Gladen and Carrie Quast, co-presidents; Megan Kingsley, treasurer; Jennifer Koenig, secretary; Julia Matson, undergraduate representative; Rebekah Bolstad, director of membership activities; and Eileen Harris and Allison Bohlman, assistant directors of membership activities. For more information about the biology club, visit our web site: www.d.umn.edu/biology/club/home.html

PreDent Club

by Cory Larson

PreDent Club Officers: Kim Scharenbroich, Secretary and Back Row, L to R: Nate Bourassa and Cory Larson, Co-Pressident; David Maki, Secretary.

The PreDent Club is finishing a great year! Our membership is bigger than ever and we have had a variety of activities taking place. Last fall, a panel of dentists talked to the group and answered a lot of questions about the profession. We also made our semi-annual trip down to the University of Minnesota twin cities campus and attended the seminar for prospective students for the U of M dental school. We try to inform our members about anything related to our future field of dentistry and we also tell them which dentists in the area would be willing to let us "shadow" or observe their work. The club helped to sponsor a seminar by Dr. Bashar Bakdash of the U of M dental school and also hosted David Mach, a UMD alumnus who has been involved in dental research. Every semester we also field a broomball team so that we can get to know each other. The best thing about this club is getting to know other predental students and sharing information about dental school.

The officers this year are: Cory Larson and Nate Bourassa, co-presidents; Dave Maki, treasurer; and Kim Scharenbroich, secretary. Our club advisor is Professor Linda Holmstrand. If you are interested in joining the club, contact me at clarson5@d.umn.edu or call me at 525-3861. You can also talk to Linda, our advisor, located in LSci 313.

PreVetMed Club Officers: L to R: Cristen Rother, Vice President, Heather Hadley, Secretary; Ann Torborg, President

PreVetMed Club

by Cristen Rother

The PreVeterinary Medicine Club provides a chance for students with interests in this field to come together and explore the veterinary medicine profession. Over the past year the club has experienced a significant increase in members, and hopes to keep attendance high. The PreVet Club participates in a number of social and educational activities. The year began with the annual fall picnic, hosted by Raj Karim, the club advisor. The picnic provides incoming freshman and new members with a chance to become acquainted with one another and meet the club officers. During the month of October, a pumpkin carving and pizza night was held and enjoyed by many. In order to raise money, the club participates in fundraisers. Monster cookies were sold in November and currently, candy bars are being sold in the Biology Department Office. Future plans for the PreVet Club include bowling, a behind-the-scenes closing tour of the Lake Superior Zoo, and a trip to St. Paul to tour the University of Minnesota College of Veterinary Medicine. During this open house students will learn about the admission process, become familiar with the campus, and obtain a general feeling about the atmosphere of the school. Anyone interested in joining the PreVeterinary Medicine Club should contact Ann Torborg at atorborg@d.umn.edu. or the club advisor.

PreOptometry Club Officers: Front: Dena Bauer, President; Back: Jessa Cook, Secretary; Barry Fuchs, Vice President Allison Wiedemann, Treasurer, is not pictured.

PreOptometry Club

by Jessa Cook and Dena Bauer

The PreOptometry Club is a recent addition to UMD. Our club officers, Dena Bauer (senior), Barry Fuchs (senior), Jessa Cook (senior), and Dena Bauer (senior) are currently trying to promote the club and build its enrollment. The club is a very useful resource for students who are interested in the profession of optometry. Information is available about various schools of optometry, the Optometry Admissions Test (OAT), requirements for entry and much more.

Our club was fortunate enough to have a recruiting officer from Indiana's School of Optometry speak during a meeting in the fall. We have also worked to coordinate fieldtrips to doctors' offices for viewing of the profession first hand. Future plans for the club include additional guest speakers in the optometry profession.

Anyone interested in joining should contact the club officers:
Dena Bauer (dbauer@d.umn.edu)
Barry Fuchs (bfuchs@d.umn.edu)
Jessa Cook (cook0156@d.umn.edu)
Alli Wiedemann (awiedema@d.umn.edu)

PreMed Club Officers: Front Row, L to R: Megan Gladen, Treasurer; Megan Kingsley, Secretary, Back Row, L to R: Jared Reese, Vice President; Joel Olson, President; Shainell Oachs, Fundraising.

PreMed Club

"It only hurts for a little while"

by Megan Kingsley

This year the club has done a great job of living up to its mission, "to provide a supportive and enriching environment for students who share a passion for (the healing arts, particularly) medicine". The number of regular meeting attendees reaches 40, with many more on the alias. Officers for the year are Joe Olson, president; Jared Reese, vice president; Megan Kingsley, secretary; Megan M. Gladen, treasurer; Sarah Huth, publicity; and Shainell Oachs, fundraising.

The club stayed active this year with at least one meeting a month. We did the usual fall cadaver tour and Dr. Repesh gave her yearly talk on preparing for medical school. This year we had Dr. Torgrimson of Associated Chiropractic Physicians give a talk on stress management. In early March, a panel of medical professionals discussed and answered questions about their training and daily professional routine. The panel consisted of a family practitioner, a physician's assistant, a nurse practitioner, a chiropractor, and a nurse anesthetist. Before the year ends, we will have the yearly club T-shirt fundraiser, a lecture/demonstration of the typical medical school interview, and election of new officers.

If you are interested in joining or just want more information about the club, contact Jared Reese (rees0059@d.umn.edu) or the alias (premedclub@d.umn.edu).

Alumni News

Vincent Carlson (B.S. Biology and B.A.S. Teaching Life Science, '00) has been teaching high school biology for the last two years in Chatfield MN, where he is also the JV baseball coach. Vin has found his career enjoyable but challenging, especially since he teaches courses in General Biology, Biotechnology, Environmental Science and Human Anatomy/Physiology! He and his fiancé Kerry Mahoney, a 2001 UMD grad, are planning a summer wedding in Ironwood MI.

Kate Carlson (B.S. '99) is at the Louisiana State University Health Science Center working on her Ph.D. in pharmacology. The lab she works in studies cocaine addiction. Kate finds life in Louisiana interesting, and very different from Minnesota, both in culture and weather.

Suzette Olson (B.S. '97) graduated last year from the University of Minnesota Dental School and is currently working in general dentistry in Little Falls, MN. Her comments: "I absolutely love all aspects of being a dentist … it was a tough road to get here, but well worth it to have such a wonderful career."

Thomas Pink (B.S. '97) has joined a dental practice (Shamp Family Dentistry) in Maple Grove MN, the town he grew up in. He and his wife Cathy have purchased a home there and Tom is happy to have some time for the leisure activities – fishing, hunting, skiing – that were on hold during the long years of college and dental school.

Lisa (Jones) Jokela (B.S. Biology and B.A. Teaching Life Science, '93) spent 5 years teaching life science and biology before electing to become a stay-at-home mom. She and her husband John live in Grand Rapids, MN, and have two sons, Benjamin and Nicholas. Lisa is a volunteer for MHAC (Mississippi Headwaters Advisory Committee) and also is the children's ministries leader at her church.

Barbara (Reidel) Sheedy (M.S.'84) works in chemical research at the U.S. EPA Laboratory in Duluth, currently studying toxicant metabolism in the trout liver model. Barb's husband David is a structural engineer and partner in the firm LHB Engineers and Architects. They have two children ages 15 and 9. Barb's leisure-time activities include gardening, piano lessons, basket weaving and reading. She also works for several volunteer organizations in the area of science education outreach and serves on several nonprofit boards. Barb is a member of the planning committee for the UMD Biology Alumni events for this fall.

Richard (Dick) Durtsche (B.S. '83) is an assistant professor at Northern Kentucky University. Since leaving UMD, he has been a world traveler - from earning a master's degree in California, to working as a wildlife consultant in Nicaragua, to Sweden for three years (where he met his wife, Åsa), then back to the U.S. and eventually earning his

(Continued on next page.)

(Continued from last page.)

Alumni News

Ph.D. at the University of Oklahoma. Dick and his wife have two children and live in Cincinnati. He enjoys coming back to Minnesota with his students that are doing research at the Long Lake Conservation Center near McGregor.

Jon Vomachka (B.S. '83) has 31 years of experience working for the Duluth Public Schools and is currently the principal at Woodland Middle School. He and his wife Deb live north of Duluth. Jon has fond memories of UMD and the mentoring, friendships and training he received, especially from Professors Carlson, Hofslund, Monson, Odlaug, Collins and Ahlgren. He recalls, as a student, assisting a young instructor in sampling blue green algae and rotifers on Fish Lake for her master's degree. [Editor's Note: Thank you, Jon, as I remember, you were an excellent assistant and a competent "motorman".]

A Face From the Past

?

Who is the former Biology Department faculty member pictured above? If you can identify her, send the name to Linda Holmstrand, Editor, *Life Scientist*, 211 Life Science Building, 10 University Drive, Duluth, MN 55812-2496 **OR** email lholmstr@d.umn.edu. I'll put your name in the hat for a drawing to be held on September 30, 2002. The prize is a book "UMD Comes of Age, The First One Hundred Years" by Ken Moran and Neil Storch. It is a pictorial overview and condensed history of the Duluth Normal School, Duluth State Teachers College and the University of Minnesota Duluth, a great keepsake!

Gifts and Donations

The Biology Department strives to support and recognize students in a variety of ways in addition to maintaining excellence in teaching and research. With the help of the individuals and organizations below, we have been able to further the development of important programs and events. The Biology Student Awards Ceremony, the T.O. Odlaug Scholarships, the Ernest and Tyyne Niemi Scholarship Fund, the Ed and Alma Turcotte Scholarships, the Sikander M. Karim PreVeterinary Award and the Jack Hargis Lecture Fund are all supported by contributions of alumni and friends. Contributions to our Gift Fund also sponsor the printing and mailing of this newsletter, *The Life Scientist* each year. Donations to the Biology Department for the period January to December, 2001, were received from the following. We appreciate these gifts and thank you sincerely on the behalf of UMD Biology faculty, staff and students.

Dr. Thomas Becker and Caroline Boehnke-Becker
Dr. Edward T. Bersu
Mr. Brian P. Borgman
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Mr. Steven J. Wilkowski
Mr. Keith Behn, President, Arrowhead Fly Fishers
United Power Association

FROM THE DEPARTMENT HEAD

by Randall E. Hicks

I found myself reflecting on the positive changes that have occurred in our department as I complete my fourth year as department head. First, we have hired seven outstanding new faculty members during the past few years. Our goal to make the freshman year the most exciting year a student will spend at UMD is being met by teaching strong Freshman Seminar classes and revitalizing our General Biology classes. Through the generosity of our alumni and friends, we not only created several new student awards but also granted our first scholarships to biology students. We have participated in proposing a new integrated graduate program in biological sciences at UMD. And now, we are finishing the final phase of planning for the new Swenson Science Building. I am happy to report that the future of the Department of Biology remains bright.

Our faculty and staff have spent many hours since September planning for the new Swenson Science Building. Recently, the Minnesota Legislature approved the final funding necessary to make it a reality! This new science building will expand our capability to support student research as well as create several modern instructional laboratories. In early June, we finished reviewing and revising the instructional and research laboratories. Ceremonial groundbreaking will occur next October and we hope our students can occupy these labs with us as early as July 2004. We still need to equip these wonderful labs and support the inquiries of students who will be using them. To reach these goals, UMD is providing our alumni and friends the opportunity to name parts of this building. You will be hearing more about this opportunity in the near future, but if you cannot wait, then I encourage you to contact the Development Director of our college, Tricia Bunten (218-726-6995, tbunten@d.umn.edu).

We continue improving connections with our friends and alumni. Personal interactions, connections, and discussions are the life's blood of an academic department. During the past fours years I am happy to have seen many examples of fruitful connections between students and faculty mentors and learn about student friendships started in our department that have endured for years. For example, as I write this article, several of our alumni are spending ten days exploring the Galapagos Islands. These alumni spent many hours exploring the biological wonders of the northland together while they were students in the 1970s. We hope you enjoy this newsletter, but we also wish to learn about more about your life after UMD, so I encourage you to attend our Biology Alumni reunion this fall or communicate with us through the alumni page on our departmental web site (http://www.d.umn.edu/biology/alumninews.htm).

As this academic year ends, we are saying farewell to Dr. Conrad Firling who is retiring. Conrad has been a key member of our department for over 30 years. During his tenure at UMD, Conrad taught more than 8,000 students and leaves a wonderful legacy of many well-trained researchers. His impact on the lives of many UMD alumni is already evident. Even as Dr. Firling is leaving, two new faculty members will be joining our department. Dr. Anna Rachinsky, a developmental biologist from Kansas State University, was recently hired to replace Dr. Firling. Her spouse, Dr. Phil Fay, will be working at the Natural Resources Research Institute in Duluth studying the effects of climate change on grassland ecosystems. Dr. Julie Etterson and her spouse, Dr. Matt Etterson, will arrive in August from the University of Virginia. Both Julie and Matt received their Ph.D. training at the University of Minnesota and are happy to be returning to our state. Julie is a biologist who uses interactions in native plant communities to discover underlying evolutionary principles. Matt, an ornithologist, will hold an adjunct Assistant Professor position in our department. I am sure that you will be hearing about the successes of these newest faculty members in the future.

As my fourth year as department head is ending, I feel comfortable taking some time away from these duties to focus on my research program in microbial ecology and update my own courses. So, I will be taking a sabbatical leave next year. Our department, however, will be in good hands as Dr. Matt Andrews serves as our interim department head. I am thankful for the outstanding support and hard work of our excellent faculty and staff. These individuals ensured that our department stayed its course, met the challenges that faced us, and are primarily responsible for our progress and many of the success stories that I have related to you.

We send our best wishes and thank you for continuing to support our department. We invite you to visit our web page (http://www.d.umn.edu/biology/) and to attend the Biology Alumni reunion this September so that you can experience some of the exciting directions our department has taken.

2002 Award Winners

Front Row, Left to right: ***Matthew Olson, GTA Special Recognition; Ayuko Kassell, Outstanding GTA; Dana Fleming, Turcotte Scholarship; Katharine Brauch, Turcotte Scholarship; Sarah Pollema, Odlaug Scholarship***

Back Row, Left to right: ***Ann Torborg, T.O. Odlaug Award; Katherine Baratto, Pre-Veterinary Award; Christopher Walker, Odlaug Scholarship, Anthony Picconatto, Outstanding First Year Student***

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WHAT'S NEW? (change of job, special recognition, family, civic involvement, travel, etc.)

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TO

The Life Scientist 2002

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

EDITOR Linda Holmstrand

STUDENT EDITORS Charlene Johnson, Megan Kinglsey

GRAPHIC DESIGN Sandra Pederson, Tahiti Bay Promotions

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