



# The Life Scientist

Summer 2003

UMD Biology Department News

## Swenson Science Building In Construction Phase

by Linda Holmstrand

The noises of excavation and construction right outside my window are a constant reminder of the reality of the James I. Swenson Science Building. Construction is proceeding on the 33 million dollar facility that will boast state-of-the-art laboratories, classrooms and research facilities for the Biology and Chemistry departments. Upon completion, the three story structure will feature a classroom laboratory building and an adjacent research wing. It is scheduled to open in time for spring semester in January of 2005. You can follow the construction progress by visiting the Labsciences Webcam site at [http://www.d.umn.edu/pictures/labsci\\_cam.html](http://www.d.umn.edu/pictures/labsci_cam.html).

The new building in progress is also a reminder, for some us "senior alumni", of the planning, groundbreaking and construction of the current Life Science Building. One of the photos accompanying this article shows Dr. T.O. Odlaug turning the ceremonial first shovel at the 1966 groundbreaking ceremony of the Life Science Building. In the other photo, Randall Hicks, Biology Department Head, and Merry Jo Oursler of the Building Committee, take part in the August, 2002 groundbreaking ceremony for the Swenson Science Building.



While current faculty, staff and students can experience the construction of the new building firsthand, there are many opportunities to be a part of this new facility. Alumni and friends of the department are encouraged to celebrate their time at UMD, or honor a relative or a favorite professor, by giving a lasting memorial. You can commemorate your education at UMD or honor someone else for as little as \$1,000, which can be paid over a period of up to five years. Other naming opportunities include sponsoring undergraduate research bays or student studies for \$5,000 or teaching laboratories for \$40,000. Contributions of any amount are always welcome for support of undergraduate

*(above) 2002 — Dr. Randall Hicks and Dr. Merry Jo Oursler break ground for the Swenson Science Building  
(below) 1966 — Dr.T.O. Odlaug turns a shovel for the Life Science Building. To the extreme right is Dr. Raymond Darland, Provost*

## Biology Department Hosts Alumni Event

by Ruth Hemming

A flurry of activity took place in the Biology Department on Saturday morning, September 28<sup>th</sup>, as student volunteers, staff and faculty members were busy making last minute preparations for the first Biology Department Alumni Event. It appeared that festivities could be held outside as scheduled, but everything was moved indoors when it started to rain. Despite inclement weather, attendance was good!

The event began with registration and a barbeque, with lots of good food and time for everyone to get acquainted. Conversations ranged from "old times" to what's happening now, as well as what the future holds for the department. After the barbeque, a short informal gathering was held in Life Science 185, where Interim Department Head Matt Andrews welcomed everyone and introduced Dr. James Riehl, Dean of CSE and current Biology faculty. He gave a short presentation about recent events in the Biology Department and an

*(Continued on page 3)*

*(Continued on page 2)*



Suzanne Hargis, Jack Hofslund and Matt Andrews discuss the faculty photo gallery (Above).

Kate Andrews and Pearl Brugger register alumni. (Below)



**Saturday, Sept. 28 11:30-3:00!**

**Join the UMD Biology Department for a free barbecue and open house!**

Lunch will be served from 11:30-1:00 outside the greenhouse just off Kirby Drive, right outside Life Science, followed by an open house until 3:00!



The Alumni Reunion Flyer announced the gala. (Above)

Ed Bersu and Linda Holmstrand enjoy reminiscing about the '60s. (Top right)

Ruth Hemming completes a bulletin board display. (Right)

Biology students Pearl Brugger, Becky Bolstad and Ann Wilcox help with decorations. (Below)



(Reunion continued from page 1)

update on the Swenson Laboratory Science Building. Matt also introduced Brian Morse, local architect for the building, who volunteered to attend this event to discuss the new building plans and answer questions. At various times in the program, names were drawn from the registration basket for door prizes and following the program, everyone was invited to tour the department. Several research laboratories were open and research posters were displayed throughout the Life Science Building. Biology faculty members were present to greet visitors and answer questions.

We extend a big THANK YOU to everyone who participated in making it a fun and informative day. Special thanks go to Stacy Johnson, Senior Office Assistant, and her committee: Kate Andrews, Linda Holmstrand and Tricia Bunten, CSE Development Officer, who were responsible for planning the event. Hundreds of alumni in the area were contacted and invited to participate. It was a great job and a fun day! We look forward to planning another special biology alumni event when the new building is completed and urge alumni to visit the Biology Department website ([www.http:d.umn.edu/Biology](http://www.d.umn.edu/Biology)) or to contact the Biology Department (218-726-6262) with questions or comments.

## New Faculty

### Dr. Julie Etterson

by Stacy Johnson

Dr. Julie Etterson recently completed her first academic year as a new faculty member in the Biology Department. This past year she taught Plant Diversity, a senior seminar and mentored independent student research, as well as initiating the setup of her research program. About her first year at UMD, Julie says "I am enjoying the challenges of my new position."



Dr. Julie Etterson

Dr. Etterson received her Ph.D. in Ecology from the University of Minnesota in 2000. Prior to her doctorate research, she earned two bachelor's degrees, one in Biology from the University of Minnesota and one in International Studies from the School for International Training in Brattleboro, Vermont. Her background includes a number of international experiences in Belgium, India, Brazil and Japan. At the University of Minnesota, Julie used plant quantitative genetics to study evolutionary response to global warming

in a prairie legume species. After graduate school, she did postdoctoral research studying parental environmental effects on an herbaceous forest species that grows in the Blue Ridge Mountains of Virginia. Two papers have recently been published on this work: "The influence of light on paternal plants in *Campanula americana* (Campanulaceae): Pollen characteristics and offspring traits" in the American Journal of Botany and "Outcrossing rate and inbreeding depression in the herbaceous autotetraploid *Campanula*" in Heredity.

Her current research encompasses both ecological and evolutionary perspectives. She is interested in the impacts of species invasions and is also collaborating with Dr. Tim Craig on the topic of speciation in the gallfly/goldenrod relationship, where her role will focus on the genetics of goldenrod evolution.

Julie and her husband, Dr. Matthew Etterson, and daughter Abigail moved to Duluth last summer from Charlottesville, Virginia. Matt currently has a post doctorate appointment at the EPA lab where his is modeling bird reproductive success as a function of exposure to agricultural pesticides. Abigail will be joined, in July, by a new baby brother. Julie has a single-semester leave for fall and then will return in the spring of 2004 to teach General Biology and to develop an upper division course in her discipline. The department is happy to have Julie's expertise in teaching and research and sincerely welcome her and her family to UMD.

## Life Scientist

### Inside This Issue

Faculty/Staff News	4
Emeritus Interview	5
Faculty Publications	6
Faculty Funding	7
Graduate Students	10
Undergraduate News	14
For Alumni	22
Gifts and Donations	23

(Groundbreaking continued from page 1)

research. Consider joining with other alumni or family members to name a room in honor of a former faculty member, relative or other significant person. The new building already has a sponsored General Biology Laboratory given by Theron E. Odlaug in memory of his uncle, Dr. Theron O. Odlaug, former Biology Department Head. For additional information on naming opportunities in the James I. Swenson Science Building, 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. Also, this fall watch for the "naming brochure" which will be mailed to all Biology and Chemistry alums.



Ruth Hemming and Stacy Johnson work on the Life Scientist.

The Life Scientist is also available on the  
Biology Department Website:  
<http://www.d.umn.edu/biology/>

## Dr. Anna Rachinsky

by Stacy Johnson

Dr. Anna Rachinsky joined the UMD Department of Biology last fall as an assistant professor in the area of developmental biology, replacing Dr. Conrad Firling who recently retired. Dr. Rachinsky received her Ph.D. in Zoology from the University of Tuebingen, Germany, in 1990, where she was involved in research and educated in the areas of developmental biology, developmental physiology, entomology and sociobiology. In 1995, at the same institution, she finished her Habilitation in Zoology, an additional qualification required for faculty positions in Germany. Since 1990 she has conducted independent research at institutions in Germany, France, Canada and the US, and collaborated with colleagues in North America, Europe, and Asia. Her work has been funded by the German Science Foundation DFG, the Max Kade Foundation/New York, and by USDA/CSREES. In 1997, Dr. Rachinsky joined the USDA Bee Research Laboratory in Beltsville, MD as a visiting scientist. Most recently, she worked as a research associate in the Department of Entomology at Kansas State University. Here at UMD, Dr. Rachinsky plans to establish a research program focused on physiological mechanisms that control the environmental-dependent expression of alternative phenotypes in insects. Her primary research interest lies in the neuroendocrine regulation of caste development in honey bees (*Apis mellifera*). Since the spring semester



Dr. Anna Rachinsky

ended, she has spent a great deal of time at “the farm” (University-owned former agriculture experiment station on Jean Duluth Road), building hives and remodeling space for her bee colonies. She is also setting up and equipping her research lab in the Life Science Building for the physiological and biochemical techniques that are part of the research. Anna’s primary teaching responsibility will be in Developmental Biology, which she taught this past spring semester and will offer again in the fall. She will also team-teach a part of General Biology I and in the future develop an upper division specialty course in an area of her expertise. On a more personal note, Anna and her husband, Philip Fay, moved to Duluth last August and recently purchased a home in Duluth Heights. Dr. Fay is affiliated with NRRI, where he is continuing research initiated at KSU. He is interested in the changes in grassland communities as they are affected by global climate changes. We are very happy to welcome these biologists to Duluth!

## Faculty/Staff News Briefs

Double congratulations to **Deb Shubat**, UMD Greenhouse Director, who received a 2002 Outstanding Service Award for Continuous Service. Last year, she also received a President’s Award for Outstanding Service.

**Dr. Randall Hicks** has been on a sabbatical leave this past academic year. He spent the fall semester writing and working in his research lab at UMD. During most of the spring semester he worked in the Department of Marine Sciences at University of Georgia in Athens, learning some DNA fingerprinting techniques which will be incorporated into his research on microbial communities. He returned to his position as Biology Department Head in July, 2003.

Congratulations to **Stacy Johnson**, our receptionist and Senior Office Assistant, on her engagement to Matt Roforth (Biology M.S. 2002). Matt and Stacy plan to be married in August.

Best wishes and Congratulations to **Geetha and Anatharama Rishi**, parents of a baby girl, Aivarshini, born

on March 29, 2003. Rishi is a Post Doc working in the research laboratory of Dr. Arun Goyal.

**Julie Etterson** and **Anna Rachinsky** both completed Faculty Tech Camp in January of 2003. This is an opportunity provided by a campus technology initiative and is an intensive period of workshops and hands-on activities, where faculty use technology tools in designing and teaching their courses.

**Lyle Shannon**, our departmental computer resource person and digital technology consultant, was a participant in the Advanced Tech Camp program.

**David Schimpf**, director of the Olga Lakela Herbarium, reports that the Herbarium provided an electronic copy of its vascular plant database to the U.S. National Park Service in January, 2003. This will be used to document past or present occurrences of vertebrate animals and vascular plant species within the boundaries of the 270 park units in the U.S. and its territories.



# Visit with a Professor Emeritus



by Ruth Hemming

**Mel Whiteside** retired in January 2000, completing a phased retirement begun in 1997. He was a faculty member in Biology since 1986 and served as Department Head from 1986-1989. Mel taught Ecology Laboratory, Plankton Ecology, Biology and Society and his most sought-after class, Coral Reef Studies. During his phased retirement, Mel taught during the fall semester each year.

In May of 1997, Mel and his wife Gildi, took delivery of their 39' Valiant sailboat. Mel's comments: "For those of you who are interested, she is sloop-rigged, displaces 18,500 lbs (before Gildi provisions), and is a very traditional, off-shore sailing vessel, i.e., more strongly built than coastal or lake vessels." They christened her "*Itasca*" after fond

memories of more than 25 years of teaching and research at Lake Itasca. After their first summer on Lake Superior, they shipped her to San Diego, where they began their Pacific cruising.

I caught up to Mel and Gildi by today's mode of communication (e-mail) to gather information about their life since retirement and asked these questions:

## **Where has the *Itasca* has taken you since retirement?**

Mel summarized their voyages as follows:  
1998 - San Diego – Mexico — Hawaii  
1999 – Hawaii – Alaska — Inland Passage — California  
2000 – California — Mexico  
2001 -2003 – Mexico — New Zealand, via Marquesas, Tuamotus and Society Islands — Tonga and Fiji  
Current plans are to visit New Zealand via Fiji—Vanuatu—New Caledonia—Australia. "Our longest Pacific passage was Mexico to the Marquesas, approximately 2400 nautical miles and 22 days. We had slow going through the Intertropical Convergent Zone (ITCZ), an area of fickle winds and squalls. The timing of all passages is dictated by major weather patterns, i.e., avoidance of areas and times of tropical storms. Sailing into the southern ocean

and east of the International Date Line can be confusing. The cold weather comes from the south, and as you go south latitudes increase; traveling west gets us progressively to smaller longitudes east."

## **What is your typical day like on the *Itasca*?**

"On passages, we are kept busy by constantly monitoring *Itasca*—maintaining battery levels, watching for chafing of lines, occasional radio contacts, and normal housekeeping. Our routine on passages is rather simple (in good weather). During daylight it's 4 hours on, 4 hours off. At night we switch to longer watches, 1800-2400 and 2400-0600. Breakfast and a mid-day meal are our main meals, otherwise snacks with tea. On all our passages we lose weight—probably a combination of simple foods and constant motion that keeps our metabolic rates up."

## **Do you have a favorite place in all your travels?**

"At the end of passages are exotic landfalls. Each island has its special attractions; we cannot say we have a favorite, although the dancing in Tahiti did get my attention. Gildi has enjoyed the challenge of trading tools (mine) for black pearls (hers) in the Tuamotus. Another benefit from cruising is a new awareness of geography. In our earlier cruising we learned the islands of the Atlantic and Caribbean—this time we are learning about the location, history,

and cultures of the Pacific Islands. Here's a little quiz for you history buffs: On what small, notable island is the metropolis of Itascatown?"

## **Do you continue to do any biological studies during your retirement?**

"It's not difficult to retain an interest in biology, as we explore southern landscapes, sail offshore, and swim in coral areas—even Gildi has taken an intense interest in reef shark behavior. If I miss any aspect of university life it's interacting with students, which I think would be the case for most of my faculty colleagues."

## **How much longer do you anticipate residing on the *Itasca* and traveling the world and what are your plans for life after *Itasca*?**

"It's difficult to predict the future—we have property in Bayfield, Wisconsin, but we are not too excited about the long winters...maybe we'll split them up by heading south."

Mel and Gildi return annually to the states to visit family and friends and usually spend several weeks in the Duluth area. We look forward to their visit this year and wish them continued happiness in their retirement adventures!



## Recent Faculty Publications

Buck, M.J., Squire, T.L., and **Andrews, M.T.** 2002. Coordinate expression of the PDK4 gene: a means of regulating fuel selection in a hibernating mammal. *Physiol. Genomics* 8: 5-13.

**M.T. Andrews**, Glueck, S.B. and Heldmaier, G. 2002. "Settling down for a long winter's nap. Coordinate expression of the PDK4 gene: a means of regulating fuel selection in a hibernating mammal." *Physiol. Genomics* 8: 3-4.

F. R. Prete, L. E. Hurd, **D.K. Branstrator**, and A. Johnson. 2002. Responses to computer-generated visual stimuli by the male praying mantis, *Sphodromantis lineola* (Burrmeister). *Anim. Behav.* 63: 503-510.

**J. R. Etterson** and L.F. Galloway. 2002. The influence of light on paternal plants in *Campanula americana* (Campanulaceae): Pollen characteristics and offspring traits. *Am. J. Bot.* 89: 1899-1906.

**A. Goyal.** 2002. Glycolate metabolism in algal chloroplasts: Inhibition by salicylhydroxamic acid (SHAM). *Physiol. Plantarum* 116: 264-270.

N. Mir, **A. Goyal** and R. Beaudry. 2002. Fruit fungal interactions: Prospects for a volatile communication system. *Molecular Insight in Plant Biology*: 181-198. P. Nath, A.K. Matto, S.A. Ranade and J.H. Weil, Eds. Oxford & IBH Publishers/Science Publishers Enfield, NH. [book chapter]

D. Ghoshal and **A. Goyal.** 2002. DHAP-reductase(s) in plants and algae: Potential use of glycerol system for improving stress tolerance in plants. *Rev. Plant Biochem. Biotech.* 1: 21-32.

A.S. Rishi, N.D. Nelson and **A. Goyal.** 2002. DNA Microarrays: Gene expression profiling in plants. *Rev. Plant Biochem. Biotech.* 1: 81-100.

B. Chinthapalli, A.S. Raghavendra, A.S. Rishi and **A. Goyal.** 2002. Phosphoenolpyruvate carboxylase from C4 plants: properties and regulation. *Rev. Plant Biochem. Biotech.* 1: 143-159.

A.G. Kassel and **A. Goyal.** 2002. Phytoremediation of trichloroethylene using hybrid poplar. *Physiol. Mol. Biol. Plants* 8: 3-10.

D. Ghoshal, H.D. Husic and **A. Goyal** 2002. Dissolved inorganic carbon concentration mechanism in *Chlamydomonas moewusii*. *Plant Physiol. Biochem.* 40: 299-305.

D. Ghoshal, D. Mach, M. Agarwal, A. Goyal and **A. Goyal.** 2002. Osmoregulatory isoform of dihydroxyacetone phosphate reductase from *Dunaliella tertiolecta*: Purification and characterization. *Protein Express. Purif.* 24: 404-411.

Maki, R. and **R. E. Hicks.** 2002. *Salmonella typhimurium* survival and viability is unaltered by suspended particles in freshwater. *J. Environ. Qual.* 31:1702-1709.

**Hrabik, T. R.** and C. J. Watras. 2002. Recent declines in mercury concentration in a freshwater fishery: the effects of de-acidification and decreased atmospheric mercury deposition. *Sci. Total Environ.* 297: 229-237.

M. A. Rashid, M. S. A. Bhuiyan, M. A. Hossain, M. A. Quader, M. T. H. Nutan and **M. Reza-ul Karim.** 2002. (+) – Usnic Acid, A Antimicrobial Agent from *Parmella kamtschandalis*. *Pakistan J. Microbiol.* 1: 25-28.

**A. F. Mensinger** and M. Deffenbaugh. 2002. Acoustical neural telemetry from free-swimming fish. *Bioacoustics* 12: 333-334.

M.A. Jones, **G. J. Niemi**, J.M. Hanowski, and R.R. Regal. 2002. Poisson regression: a better approach to modeling abundance data. *Predicting Species Occurrences, Issues of Accuracy and Scale*, J.M. Scott and 6 co-editors. Chapter 35: pp.411-418. Island Press, Washington, D.C.

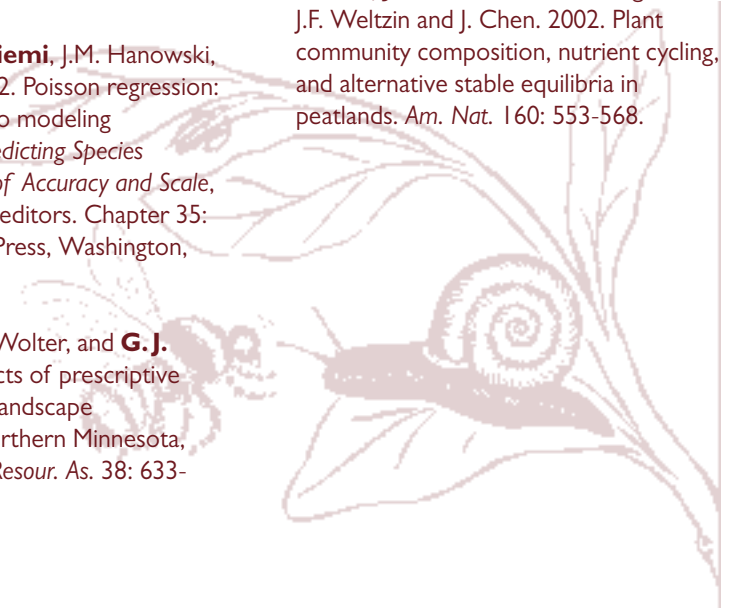
J.M. Hanowski, P.T. Wolter, and **G. J. Niemi.** 2002. Effects of prescriptive riparian buffers on landscape characteristics in northern Minnesota, USA. *J. Am. Water Resour. As.* 38: 633-639.

E.J. Gustafson, M.G. Knutson, **G. J. Niemi**, and M. Friberg. 2002. Evaluation of spatial models to predict vulnerability of forest birds to brood parasitism by cowbirds. *Ecol. Appl.* 12:412-426.

Giulivi, C. and **Oursler, M. J.** 2003. Role of Mitochondrial Oxygen and Nitrogen Reactive Species in Signaling. *Signal Transduction by Reactive Oxygen and Nitrogen Species: Pathways and Chemical Principles*. M. Torres, J. Fukuto, and H. J. Forman, eds. Kluwer Press, New York. [book chapter]

Gingery, A., Bradley, E., Shaw, A., and **Oursler, M. J.** 2003. Phosphatidylinositol 3-kinase Coordinately Activates the MEK/ERK and AKT/NF\_B pathways to Maintain Osteoclast Survival. *J. Cellular Biochem.* 89:165-79.

**Pastor, J.**, B. Peckham, S.D. Bridgham, J.F. Weltzin and J. Chen. 2002. Plant community composition, nutrient cycling, and alternative stable equilibria in peatlands. *Am. Nat.* 160: 553-568.



## 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 Graduate School Grant-in-Aid, "High-throughput Screening of Gene Expression during Mammalian Hibernation," 1/1/02 – 6/30/03, \$28,041.

**M.T. Andrews**, Minnesota Medical Foundation, "Hibernation Strategies to Prevent Ischemia and Reperfusion Injury," 8/1/02 – 7/31/03, \$13,000.

**M.T. Andrews**, National Institutes of Health (Co-PI, Rolf Gruetter, PI), "Dynamic MRI and MRS Studies of Focal Neural Activation," 4/1/03 – 3/31/07, \$1,457,013.

**C. M. Belk** and **L. J. Shannon**, CSE Technology Fee Grant for equipment for cell biology laboratory course, \$20,000.

**D.K. Branstrator** (PI), and **L.J. Shannon**, Minnesota Sea Grant College Program External Research Grant, "Effects of physical and chemical stressors on survival of the resting egg stage of *Bythotrephes longimanus*," 03/03-02/05, \$54,867 and 1 GRA salary for 2 years.

M. Zhou, N. Wattrus, and **D. K. Branstrator**, Minnesota Sea Grant College Program External Research

Grant, "A multi-disciplinary study: the spatiotemporal distribution and productivity of zooplankton in the western arm of Lake Superior," 03/01-02/03, \$90,000 and 1 GRA salary for 2 years.

**D. K. Branstrator**, University of Minnesota Grant-in-Aid, "Chemical induction of body defenses in the water flea, *Daphnia*," 07/01-07/03, \$25,900.

**T. P. Craig et al**, National Science Foundation, "Networking our Research Legacy: Infrastructure to Document, Manage and Access Ecological Data," '99-'04.

**J. Etterson** and **T. Craig**, CSE Technology Fee Grant, instructional equipment, 2002-2003, \$4,655.

**Goyal, A.**, N. Nelson, and V. Kapur, Sota Tec, "Production of High Value Biomolecules in Transgenic Hybrid Poplar," 04/03-03/04, \$100,000.

**Goyal, A.** (Co PD), N. Nelson, and C. Edwardson, USDA-CSREES, "Forest Products Research for Business Development," 7/02-6/04, \$250,207.

**R. E. Hicks**, Minnesota Sea Grant College Program, "Survival and Virulence of Pathogenic Bacteria within Microbial Communities Attached to Suspended Particles in a Freshwater Estuary," 03/99-12/03, \$48,210.

**R. E. 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," 02/01-01/03. \$95,460.

**R. E. Hicks**, University of Minnesota Duluth, "Identifying Sources of *Escherichia coli* and Uncovering Seasonal Changes in Archaeal and Bacterial Picoplankton Communities," 08/02-12/02, R/V Blue Heron ship time for 6 days.

M. J. Sadowsky and **R. E. Hicks** (Co-PI), Minnesota Sea Grant College Program, "Sources and Impacts of 'Naturalized' *Escherichia coli* in Coastal Environments," 02/03-01/05, \$100,000; \$46,440.

**L. Holmstrand**, CSE Technology Grant for portable 'COW' (Computer on Wheels, computer, projector and accessories) for classroom use, \$5300.

**T. Hrabik**, N. Wattrus, **D.K. Branstrator**, B. May, E. Ralph and S. Stark, Minnesota Sea Grant College Program External Research Grant, "Assessing determinants of lake trout reproductive success: comparison of Lake Superior reef complexes with contrasting survival rates of young lake trout," 03/03-02/05, \$70,000 and 1 GRA salary for 2 years.

**T. Hrabik**, Bradley Fund for the Environment-Sand County Foundation, "Assessment of the restoration of winter-kill influenced fish community using winter aeration," 2002, \$8,600.

**T. Hrabik**, (Co-PI), R. D. Ricketts, and N. Wattrus, National Science Foundation, "Oceanographic Instrumentation, R/V Blue Heron," 2003, \$45,600.

**T. Hrabik**, collaborator with Don Schreiner, Minnesota's Lake Superior Coastal Management Program, "Development of a hydroacoustic survey design for the Minnesota waters of Lake Superior," 2003, \$36,900.

**T. Hrabik**, D. R. Schreiner, M. P. Ebener and M. H. Hoff, Great Lakes Fishery Commission-Coordination Activities Program, "Compilation and analyses of Lake Superior Salmonine diets: a multi-agency collaboration," 2002-2004, \$46,000.

**M. R. Karim**, B. Clarke, E. Feroz, N. Hazareesingh, T. Isbell, and M. Kamau, Chancellor's Small Grant, "Cultural and Global Perspectives on Terrorism," 10/01-06/03.

**M. R. Karim** and B. Clarke, Dept of Health and Human Resources, "Initiative for Minority Students: Bridges to the Baccalaureate," 07/01-06/04.

**M. R. Karim** and B. Clarke, "Minority Access for Research Career (MARC)," 07/02-06/06.

**M. R. Karim** and P. Kiprof, Chancellor's Small Grant, "Activity of Benzoboroxole and its derivatives against Viruses, Bacteria and Fungi—An Interdisciplinary and Collaborative Project," 03/02-12/02.

(Continued on next page.)

## Current Faculty Funding (continued from page 7)

**M. R. Karim**, P. Kiprof and V. Zhdankin, Chancellor's Small Grant, "Activity of Tea Polyphenols, Benzoboroxole and hypervalent Iodine compounds as anti-cancer drugs for Melanoma—An Interdisciplinary and Collaborative Project," 10/02-05/03.

**A.R. Klemer** (Project Partner), P.Shubat and E. Chu, Minnesota Dept of Health, "Economics-based Analysis of Children's Environmental Health Risks," 07/03-06/05, \$95,000.

**A.R. Klemer** (Associate PI), M. Mageau, R. Lichty, J. Skurla, and W. Fleishman, Northeast Regional Sustainable Development Partnership, "The Iron Trail Assessment Project," 12/01-06/03, \$36,633.

**A. F. Mensinger**, CSE Technology Fee Grant, equipment for Biol 5760, Physiology of Fishes, 2002, \$7,000.

S. M. Highstein, **A. F. Mensinger** (Co-PI), NIH PPG 51511, "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," 02/01-01/03, \$66,000 and graduate student fellowship.

**A. F. Mensinger**, Minnesota Sea Grant, "Olfactory recording from free-swimming steelhead trout," 02/03-01/05, \$66,000 and graduate student fellowship.

**G.J. Niemi** (PI), R. Axler, J. Hanowski, G. Host, **T. Hrabik**, L. Johnson, C. Johnston, J. Kingston, and **Carl Richards**, US Environmental Protection Agency, "Development of environmental indicators of condition, integrity, and sustainability in the Great Lakes Basin," 2001-2005, \$6,000,000.

**G.J. Niemi** (PI) and C. Johnston. National Aeronautics and Space Administration, "Development of environmental indicators for the US Great Lakes using remote sensing technology," 2001-2005, \$600,000.

**G.J. Niemi**(PI) and J. Hanowski, 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-present, \$247,360.

**G.J. Niemi** (PI), Minnesota Legislative Commission on Minnesota Resources and Department of Natural Resources, "Effects of changes in the forest ecosystem on the biodiversity of Minnesota's northern forest birds," 1991-2003, \$2,112,473.

**M.J. Oursler**, Department of the Army, "Mechanisms of Transforming Growth Factor Beta Regulation of Tumor Progression in Metastatic Cancer," 10/00-09/03, \$322,754.

**M.J. Oursler**, Eli Lilly Pharmaceuticals, "Molecular Mechanisms of Transforming Growth Factor Beta Stimulation of Osteoclast Differentiation: Potential Targets in Treating Pathological Bone Loss," 01/02-12/02, \$25,000.

**M.J. Oursler**, Whiteside Institute for Clinical Research, "2 Methoxy estradiol: a potential novel therapy to block metastatic breast cancer progression," 01/03-12/03, \$9,000.

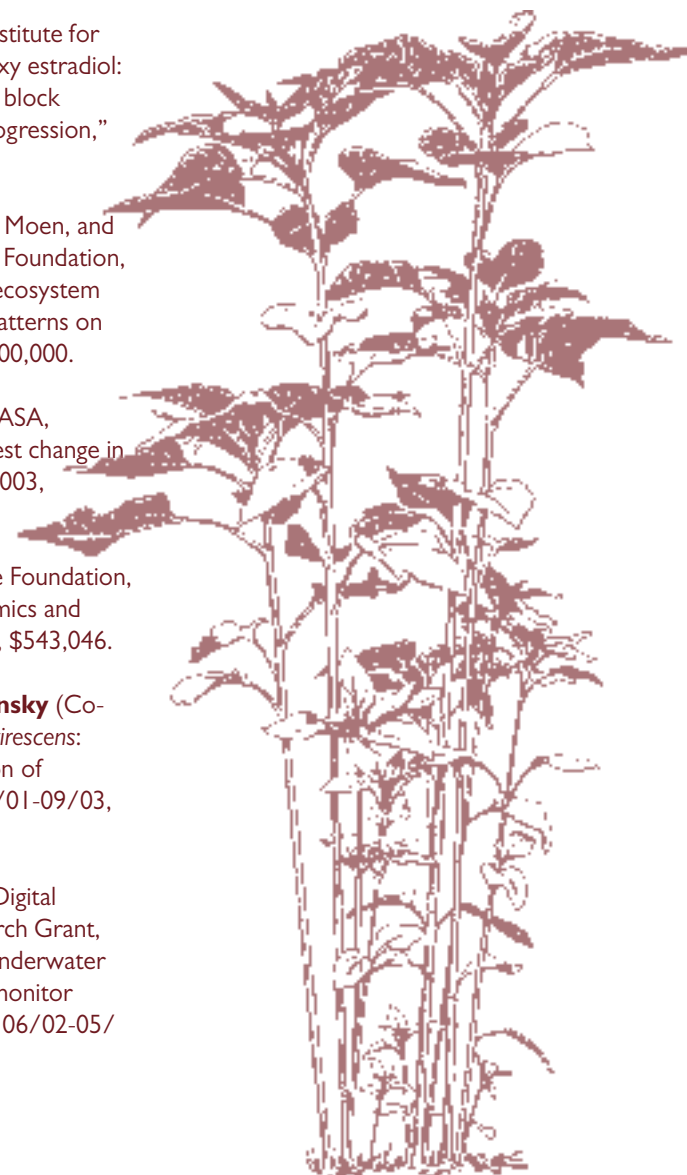
**J. Pastor** (PI), Y. Cohen, R. Moen, and B. Dewey, National Science Foundation, "Moose population cycles, ecosystem properties, and landscape patterns on Isle Royale," 1998-2003, \$300,000.

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

**J. Pastor**, National Science Foundation, "Wild rice population dynamics and nutrient cycles," 2002-2006, \$543,046.

S.B. Ramaswamy, **A. Rachinsky** (Co-PI), USDA/NRI, "*Heliothis virescens*: Model for signal transduction of allatotropism in moths," 10/01-09/03, \$130,000.

**L.J. Shannon**, Visual and Digital Imaging Lab Summer Research Grant, "Development of a digital underwater photography technique to monitor zooplankton communities," 06/02-05/03, \$2,000.





## From the Department Head

by Matt Andrews

During the 2002-2003 academic year, the Department of Biology saw growth, in both the number of faculty and the number of students we serve. This summer we are also seeing growth in the construction of the James I. Swenson Science Building. This state-of-the-art facility will be a tremendous boost to our mission of teaching, research and service. Our department will still occupy part of the Life Science Building even after we move into our new home in January 2005. You can view construction of the Swenson building via a web cam link through the Department of Biology web site or directly at [http://www.d.umn.edu/pictures/labsci\\_cam.html](http://www.d.umn.edu/pictures/labsci_cam.html).

This past year, faculty member Lyle Shannon upgraded our departmental website, including features on both of our new faculty members, Drs. Julie Etterson and Anna Rachinsky. Both Julie and Anna began their appointments in August 2002. Julie Etterson taught Plant Diversity during her first semester on campus and has initiated a research program that uses a quantitative genetics approach for studying plant adaptations to environmental change. Anna Rachinsky has replaced the recently retired Conrad Firling as our developmental biology instructor and is continuing her well-established research on neuroendocrine control of insect



development. In other faculty news, Randall Hicks was on sabbatical leave at the University of Georgia. He resumed his duties as Department Head beginning July 2003.

On the Friday of Homecoming Weekend 2002, Class of 1961 Department of Biology alumnus Dr. Jerome Klun was inducted into the College of Science and Engineering Academy of Distinguished Alumni. Dr. Klun's revolutionary new insect repellent, SS-220, is viewed as a likely replacement of the long-standing repellent DEET. Details on his discovery were recently published in the June 16, 2003 issue of *The Scientist* (<http://www.the-scientist.com>). The day after the ceremony, the department hosted a barbeque for our alumni and friends so that they could meet the faculty, tour some of our teaching and research labs, and hear the latest information on the Swenson building from the local architect and CSE Dean James Riehl. Despite wind and rain outside, the lunch and displays were a big success inside. The

next planned event of this type will be an Open House of our new building in 2005.

In the classroom, our ongoing efforts to improve the freshman experience continued as two new freshman seminar courses were offered last spring semester. Dr. Joanne Itami taught an exciting new course on Darwinian Medicine and Linda Holmstrand developed a course on exotic and invasive species. Due to the rapidly changing character of modern biology, the department is continually updating its curriculum to offer our students the most up-to-date material. Revisions in the aquatic biology and cell biology curricula are currently being led by the efforts of Dr. Andrew Klemmer and Dr. Merry Jo Oursler, respectively. The Biology Graduate Program has also grown in both student number and quality. A 2001 external review of the Department of Biology states "UMD may, in fact, have one of the finest MS-level graduate programs in ecology in the country." This program is led by our Director of Graduate Studies, Dr. John Pastor. Dr. Pastor is an outstanding researcher who routinely applies mathematical theory to the study of ecology. He has won numerous awards and earlier this year he was recognized by the Institute for Scientific Information (ISI HighlyCited.com) as one of the most highly cited ecologists in the world. In other research news, Dr. Allen Mensinger was notified in June 2003 that he will receive a large National Science

Foundation (NSF) grant to study "Acoustic Detection in Free-swimming Toadfish". The Department of Biology was also fortunate to receive a glimpse of the inner workings of NSF when Dr. Tim Craig hosted NSF Program Manager, Dr. Sam Scheiner in February 2003. Dr. Scheiner delivered a seminar and met with UMD faculty to discuss grant applications and procedures for evaluating NSF grants.

Overall it has been a good year in the Department of Biology and we are looking forward to the next few years when we transition into our new facility. Near-term challenges for the UMD Department of Biology include an expanding enrollment combined with shrinking state appropriations. However, in my year as interim department head, I have been amazed at how well the Biology faculty and staff meet these challenges and continue to offer our students the best possible education in the biological sciences.



## Graduate Commencements

[Since the previous newsletter was issued in the winter of 2002, there have been two spring commencements. Starting with the next issue, the *Life Scientist* will cover events in a single academic year.]

### 2002

On May 16, 2002, the conferring of graduate degrees took place at a ceremony in the Romano Gymnasium on the UMD campus. The commencement speaker was George R. "Rip" Rapp, a Regents' professor of geoarchaeometry and director of the UMD Archaeometry Laboratory. Master of Science Degrees in Biology were presented to ten students:

Fred Asare  
Mary K. Karst  
Brendan P. Keough  
Anne E. Lacy  
Antoinette I. Lamkin  
Brady J. Mattsson  
Christina M. Miller  
Matthew M. Roforth  
Michael T. Scott  
Matthew C. Thompson

### 2003

The Graduate Commencement ceremony was held on May 15, 2003 in the Romano Gymnasium. Following a prelude concert and processional, the commencement address was presented by Thomas B. Duff, professor and head of finance and management information sciences at UMD. Dr. Duff is retiring after the 2003 academic year and is recognized as an outstanding advisor and mentor. The students listed below received the Master of Science Degree in Biology at this ceremony.

Kevin M. Flynn  
Damon M. Krueger  
Jennifer H. Milan  
Matthew R. Olson



## Graduate Student Profiles

by Lukas Sheild

**Michael Aho**, a long time resident of Duluth, received his undergraduate degree from Moorhead State University in Biology, and came to Duluth under the advisement of Dr. Andy Klemer. His graduate work is in environmental biology with an emphasis in aquatic biology. Mike's thesis describes competition experiments between cyanobacteria and green algae and asks the question "Do differences in light, climate and hydrogen peroxide influence their outcome?" This summer he is working with the GLEI project wetland vegetation as a field technician, and will also start his own experiments for his research. He enjoys canoeing and fishing and the solitude in the outdoors and hopes to teach at a level where he can continue research.

**Kamal Alsharif**, originally from Bethlehem, Israel, received his undergraduate degree from St. Cloud State University and his master's from Mankato State University. He is attending UMD for a Ph.D. in water resource management under the advisement of Dr. Andrew Klemer. His thesis work attempts to measure the efficiency of water use in the Palestine territories. He hopes he can return there to the region of his birth. He has passed the written exam and hopes to pass the oral exam by spring of 2004.

**Rebecca Anderson**, from St. Peter, Minnesota, has an undergraduate degree in Biology and Environmental Studies

from Augustana College in Rock Island, IL. She has an interest in both plant ecology and ecological genetics, so is working with Drs. Julie Etterson and David Schimpf in measuring impacts of the introduction of non-local plant species on local populations. This summer Becky attended and volunteered her time at the annual meeting for the Society for Conservation Biology held in Duluth. She will also be conducting field work for her research project. Becky enjoyed teaching in general biology this past year. Her long-range plans are to work in academia outreach or research, and to promote the management of natural resources.

**Michael Bourdaghs** is not new to UMD, as he received his B.S. Biology here in 1999. He originally hails from Stillwater, Minnesota. He has spent time working nearby at the University of Minnesota N.R.R.I. The focus of his graduate research is in the realm of plant ecology, more specifically, evaluating the concept of Floristic Quality Assessment Index (FQAI). This index ranks plants according to their role in the ecological 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 the Great Lakes coastal wetlands and is part of the 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 in wetland management and to play a role in making wetland policy decisions.

**Meghan Brown** received her undergraduate degree in biology at the University of Michigan and soon after came to Duluth. Working with Donn Branstrator, she spends long hours studying the distribution and emergence of *Bythotrephes* sp. (spiny water flea), specifically the resting eggs and the role of cumulative environmental stressors in dormancy. Working at Island Lake and Boulder Lake, she will estimate hatching success in a cumulative array of oxygen, temperature and pH environments in laboratory exposure experiments. She completed her master's degree in 2001 and preliminary exams to Ph.D.

candidate where she was accepted to one field season. She hopes to finish her degree in 2005 and would like to teach and do research at a University. She has been supported by research surveying crustacean zooplankton in the western arm of Lake Superior and tolerance limits of *B. longimanus* to physical and chemical stressors.

Formerly from Auburn, Maine, **Michael Callahan** received his undergraduate degree in both Marine Biology and Molecular Biology from Florida Tech. He has been working with optic nerve regeneration in hybrid sunfish with Dr. Allen Mensinger as his adviser. He hopes to finish his thesis this summer and to pursue a career in the field of biology. He has been supported as a teaching assistant for Human Anatomy, Animal Physiology, and Biology and Society.

When **Nathan DeJager** is not tromping through the woods in search of moose-plant interactions, he enjoys tying his own flies and attempting to catch the illusive trout. After attending Northwestern College for his undergraduate degree in Biology and Environmental Science, he came to Duluth to pursue graduate research in moose-plant interactions in the forest under the advisement of John Pastor. He traveled to Umea, Sweden this summer to conduct his research where 8 enclosures have been constructed, and 4 moose population densities have been simulated. He has received the North American Moose Conference Award. Nathan is supported as a teaching assistant and lab coordinator for General Biology.

**Adam Dewese** comes to us from the 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 Sciences program at the University of Minnesota twin cities campus. His thesis research, advised by Dr. Andrew Klemmer, will focus on cyanobacteria domination in freshwater ecosystems. He hopes to complete his research by the spring of 2004 and to move back into the field of environmental protection with state or federal government. Adam is supported as a teaching assistant for General Biology I and Advanced Lake Ecology.

**David Grandmaison**, a native of Duluth, graduated from St. Johns University where he received his B.S. in Natural Science. David 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. His research proposes that these sensitive bird species can be used as indicators of the overall health of the ecosystem. The fieldwork involves examining landscape patterns of nest predation and potential predator assemblages in coastal wetlands along a range of environmental conditions. Dave hopes to determine which measurements are most useful as indicators of ecosystem health. He plans to complete his research this summer and to prepare his graduate seminar and defend his thesis in September. He has been supported as a teaching assistant in

the Biology Department, teaching laboratories and serving as lab coordinator for General Ecology and Biology and Society.

**Beth Holbrook** chose Duluth because of her love for fish and the access to them. She received a degree in Natural Science from The College of St. Benedict. Beth works with fish ecology under the mentorship of Dr. Tom Hrabik, and will travel to the Apostle Islands this summer to study age-0 lake trout, and to determine the most important factors affecting them. Beth will be using hydro-acoustics to measure fish and mysid (the main food source of lake trout) population densities.



Graduate Students (L to R, kneeling in front): Damon Krueger and Ayuko Kassel, Back Row: Wendy Hieb, Beth Holbrook, John Sandberg, Brad Ray, Mike Bourdaghs, David Grandmaison, Jennifer Milan

Ultimately she hopes to quantify the effects of predation, competition and food availability on the age-0 lake trout. This summer she will continue her research and hopes to be done in May of 2004. In the future Beth sees herself earning a Ph.D. then traveling the world working in the exciting world of fish. She is supported as a research assistant and a teaching assistant for General Biology.

**Charlene Johnson's** research has attempted to predict the early vegetation of a wetland created from dredge material in the Duluth-Superior Harbor. She completed her thesis and degree requirements this spring under the advisement of Dr. David Schimpf and now hopes to look for work in private or government engineering. She would also enjoy teaching at a local college, where she could stay at home and spend time watching after her young son Alex. Charlene is a seasoned veteran in teaching General Biology II, where she also served as the laboratory coordinator.

**Rhett Johnson** chose to come back to school after he took an undergraduate degree at Iowa State University. His area of study is peat lands hydrology and botany. This summer Rhett will continue his research comparing groundwater levels to the radial growth of peat land trees (black spruce and tamarack) in and around Thief River Falls, Minnesota. His goal is to find whether the radial growth is hampered by raising the water table and if so, how much. He will also determine the amount of flooding that trees can tolerate. This summer he will live and work at Agassiz National Wildlife Refuge near his more than 50 study sites. He is supported as a teaching

assistant for General Biology II lab and Ecology.

**Ayuko Kassel** attended the University of Wisconsin, Madison where she earned a degree in both Zoology and Japanese. She can be found around Dr. Goyal's laboratory where she studies the isolation and characteristics of mitochondria from poplar tree protoplasts. For four semesters, Ayuko was a teaching assistant for General Biology and a lab coordinator for one semester. She hopes to finish her experiments and thesis this summer, and would like to work in a research facility in the U.S. for a few years following

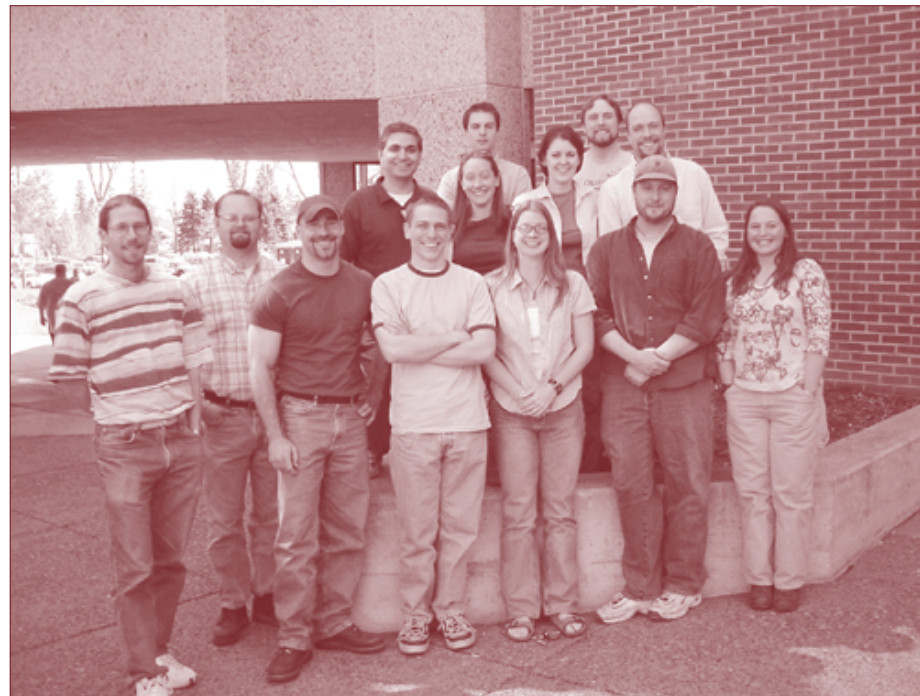
completion. In the long run she plans on returning to Japan to pursue work.

**Damon Krueger** attended the University of Wisconsin, Madison for an undergraduate degree in wildlife ecology. Damon's graduate work continues to take him down that path by working with fisheries management. This spring he presented and defended his thesis on management applications for mitigating the negative effects of rainbow smelt on native fishes in the Bear River watershed in Vilas County, Wisconsin. His research was advised by Dr. Tom Hrabik, and he is the first graduate student of Dr. Hrabik's to graduate. He will present

his masters research at the AFS meeting in Quebec City this year and will start his Ph.D. studies at the University of Michigan, Ann Arbor in the fall. He strives to teach one day and to continue his research. Damon has been supported as a teaching assistant for General Biology. He continues his active lifestyle of football, softball and mountain biking and enjoys maintaining his saltwater fish tank.

**Christian Matson** originally came from Hingham, Maine, but attended Northland College for his undergraduate degree and decided to go to UMD for his masters. His research is on the up regulation of monocarboxylate transporters (MCT's) in the blood 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. This summer, he will write his thesis and visit his folks in Vermont. After graduation he hopes to sell pharmaceuticals in the northern Wisconsin region, an area he loves to talk about.

**Matt Olson** also completed his undergraduate degree in Biology at UMD, and started his graduate research in environmental microbiology. He has worked with Dr. Randall Hicks and Dr. Rich Axler of the NRRI on seasonal virus removal to alternative onsite wastewater treatment systems. He hopes to enter a Ph.D. program at The University of Iowa next year and to some day teach and continue research for his "love of the smaller world." He has been supported as a teaching assistant in General Biology, Microbial



Graduate Students (L to R, starting with row 1): Mike Callahan, Adam DeWeese, Rhett Johnson, John Schwalbe, Anna Peterson, Mike Aho, Hazel Richmond, Kamal Alsharif, Becky Anderson, Jen Schreiber, Christian Matson, Nathan DeJager, Matt Olson

Ecology, Virology, and Microbiology and received special department recognition this spring as an outstanding TA.

**Anna Peterson** says “the staff, faculty and other grad students have made my experience a memorable one”, and she looks forward to finishing her research on birds and wetland assessment under Dr. Gerald Niemi in the fall of 2004. This summer she will be conducting field research for her thesis in Wisconsin and The Upper Peninsula of Michigan where she'll be enjoying the outdoors and some of her favorite hobbies such as camping, canoeing and birding. She comes from a family of canoe racers and has canoed ever since she could hold a paddle. She hopes to make birding into a career and someday to obtain her Ph.D. and possibly teach.

**Bradley Ray** joins us from Omaha, Nebraska but received his undergraduate degree at Northland College in Biology and Fish and Wildlife Ecology. His graduate research is in fisheries and the study of variability in Lake Superior salmonine predator diets, characteristics and selectivity. He works under Dr. Tom Hrabik and anticipates finishing in May of 2004. In his research he is compiling all diet data from Lake Superior predators by state, tribal, and federal agencies over the last 15 years. The data will be combined with the U.S.G.S. spring forage base data in order to determine prey selectivity and diet overlap between predatory salmonines. He hopes to earn his Ph.D. in the future and possibly become a professor.

**Hazel Richmond**, originally from Falmouth, Massachusetts obtained her B.S in Biology at University of

Massachusetts, Amherst. Hazel worked in Dr. Mensinger's lab studying the physiology of fish. She finished her research on the foraging mechanisms of age-0 yellow perch, and the data will be used in foraging and bioenergetics models that predict growth of fish in laboratory experiments. She plans to spend this summer teaching marine science at a summer school in Cape Cod, where she'll be back by the ocean doing the things she loves like swimming, sailing and snorkeling. Hazel was supported by a graduate teaching assistantship and taught laboratory courses in General Ecology and Animal Diversity.

**John Sandberg**, a recent newcomer to Duluth, received his undergraduate degree in Biology from St. Johns University in 2001. John studies aquatic ecology, making Duluth a perfect place to carry out his research. He works with macrobenthic communities of near shore habitats in eastern Nipigon Bay. His faculty advisor is Dr. Lucinda Johnson, N.R.R.I., where he has been a research assistant in the invertebrate ecology lab. This summer he will continue benthic sampling in Nipigon Bay, and hopes to finish by 2004.

**Jennifer Schreiber** is completing data analysis and writing her thesis on “Viability and Invasiveness of *Salmonella typhimurium* in an Aquatic Environment” under the advisement of Dr. Randall Hicks. She presented her research at both the Sigma Xi poster session and the LiMNology conference in 2002. While a graduate student at UMD, Jen has held both RA and TA positions. She taught in several courses - Human Anatomy, Cellular Biology, Biology of Women and

Molecular Biology – and received special departmental recognition as a teaching assistant in the spring 2003 awards ceremony. This summer, Jen plans to spend some time camping and visiting with family and friends. After graduation in December 2003, she'd like to work for a biomedical industry or teach at a community college.

**John Schwalbe** is no stranger to UMD as he received his undergraduate degree in Biology here. John works with Dr. Tom Hrabik on changes in mercury concentrations of yellow perch, which

are lake-specific responses to a decrease in atmospheric deposition. This summer he will continue his research at Trout Lake in Wisconsin in order to start working on his thesis next year. He hopes to get his Ph.D. in aquatic toxicology and to someday work for the EPA or DNR.

Other graduate students in the Biology Department this past year included Kari Dresback, Wendy Heib, Jen Milan, Chris Mrozinski, Lucy Palmer and Mark Paulson.



## UMD Chapter of 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 Arun Goyal, President; Ron Caple, President-elect; Bob Cormier, Secretary; and Jean Regal, Treasurer.

The UMD Chapter of Sigma Xi sponsored the Fourth Annual Scientific Equipment Show on Wednesday, April 16, in the Kirby Student Center Ballroom. The Equipment Show was intended to bring researchers, students and vendors in personal contact and show the latest technology available for research. That goal was met, as about 300-400 people attended to meet with representatives from such vendors as pbasio, Fisher Scientific, Millipore, Qiagen, BioRad, and Shimadzu, just to name a few.

## Biology Awards Ceremony

by Ruth Hemming

The 2003 Department of Biology Awards and Scholarships Ceremony was held at the Griggs Center on Friday, April 25. Dr. David Schimpf, Awards and Scholarship Committee Chair, welcomed those attending and presented a brief background of each award and scholarship, including the required selection criteria. Faculty members presented the awards and scholarships, along with a framed certificate and a gift or check. The recipients are listed below:

Outstanding Graduate Teaching Assistant - Hazel E. Richmond  
Graduate Teaching Assistant, Special Recognition - Matthew R. Olson and Jennifer A. Schreiber  
T.O. Odlag Scholarship - Eric G. Bluemn and Karen S. Myren



Biology student award winners for 2003 are pictured (L to R) Front Row: Katherine Baratto, Eric Bluemn, Christopher Walker, Matthew Olson, Ashley Gubbels. Back Row: Corrie Evenson, Karen Myren, Eileen Harris, Jen Schreiber, Scott Sveiven, Sara Rubbelke, Kar Kuffenkam, Hazel Richmond. Not Pictured: Holly Blais.



## Outstanding Graduate Teaching Assistant Award

Hazel Richmond, pictured here with Dr. Steve Hedman, Associate Dean of the Graduate School, was chosen as the 2002-2003 outstanding graduate teaching assistant in Biology. The award is presented by the College of Science and Engineering and honors the graduate student selected by each department.



Hazel Richmond is congratulated by Associate Vice Chancellor Steve Hedman.



Hazel Richmond poses with Matt Olson and Jen Schreiber, also nominated for the outstanding GTA award. More information about each of these students can be found in the "Graduate Student Profiles."

Ed and Alma Turcotte Scholarship - Katherine M. Baratto and Christopher M. Walker  
John McCabe Scholarship - Corrie J. Evenson, Ashley L. Gubbels, Kerry L. Kuffenkam and Sara A. Rubbelke  
Sikander M. Karim Pre-Veterinary Medicine Award - Holly A. Blais  
Outstanding First Year Student - Scott J. Sveiven  
T.O. Odlag Award for Outstanding Senior - Eileen R. Harris

Dr. James Riehl, Dean of the College of Science and Engineering, offered his congratulations and acknowledged the academic endeavors and accomplishments of these outstanding students. Raj Karim, Awards and Scholarship Committee member, gave closing remarks. A reception followed the awards ceremony, which was well attended by faculty, staff, students and family members of the award winners. Congratulations to all!



## 2002-2003 Award Winners

Each year the Biology department gives out several awards to students. These include various scholarships and honors to recognize a few of the excellent biology and cell biology students.

The *Outstanding Freshman Biology Student* award went to **Scott J. Sveiven**. This award is given to a student who has done incredibly well in General Biology I and II. The student is chosen on the basis of point totals in class and recommendations by teaching assistants.

This year's *T.O. Odlag Award* for the outstanding biology student was given to **Eileen Harris**. Eileen is from Waseca, Minnesota and after graduation will be attending graduate school for environmental science. For this award, faculty members nominate senior biology students who have shown academic scholarship, leadership and service to the department. This award was created in honor of Dr. Theron O. Odlag who was a long-time department head.

The recipient of the *Pre-Veterinary Medicine Award* was **Holly A. Blais**. A junior biology major, Holly hopes to attend the College of Veterinary Medicine in St. Paul after graduation, eventually opening up her own practice in her hometown of International Falls. The Karim Pre-Vet Med award is in memory of Dr. Raj Karim's father and is awarded to a sophomore or a junior who has experience working with

animals, as well as demonstrated maturity and reliability. Students applying for this award must have at least a 3.4 GPA and submit a one-page essay on their qualifications.

The *T.O. Odlag Scholarship* is awarded to two applicants each year. This scholarship, given to a current biology or cell biology student, is based on both need and merit. A GPA of 3.0 is minimal. The two recipients for this year were **Eric Bluemn** and **Karen Myren**. Eric is a pre-med student from Chippewa Falls, Wisconsin. He is currently a sophomore who plans on attending medical school and specializing in surgery. Karen is also a sophomore, double majoring in cell biology and international studies. She is from Miltona, Minnesota and also plans on a career in medicine.

**Katherine Baratto** and **Christopher Walker** were this year's recipients of the *Ed and Alma Turcotte Scholarships*. Chris is from Appleton, Minnesota and is a senior biology major. He will be attending the University of Minnesota Medical School next year focusing on either oncology or family practice. Katy has just completed her junior year here at UMD and is planning on applying to the Veterinary School at the University of Minnesota. She would like to practice small animal and exotic/wildlife medicine. Her hometown is Deerwood, Minnesota. The Ed and

Alma Turcotte scholarships are awarded to biology or cell biology undergraduate students who have at least a 3.0 GPA, are eligible for Minnesota resident tuition and demonstrate financial need.

The four deserving winners of this year's *John McCabe Scholarships* are **Corrie Evenson, Ashley Gubbels, Kerry Kuffenkam** and **Sara Rubbelke**. The purpose of the John McCabe scholarship is to assist high achieving biology or cell biology students who also demonstrate financial need. Students must have an overall GPA of 3.0 or higher and be fulltime undergraduates. Corrie is from Otter Creek, Wisconsin and will be a senior next fall. She plans on being a Christian missionary in either public health or the natural sciences. Ashley is a junior biology major from Glenwood, Minnesota, hoping to attend the UMD School of Medicine after graduation. Kerry would like to become a family practitioner in her hometown of International Falls. Another dream is to assist in medical care in Third World countries. She has completed her junior year as a biology major. Sara is from Maplewood, Minnesota. She is a junior also, planning to graduate next spring and then attending medical school in the fall of 2004.



## Darland All-American Scholarship Recipients

Two Biology students, Sarah Pollema and Stefanie Reinhart-Medin, were selected as recipients of the Raymond W. Darland All-American Scholarship for the 2002-2003 academic year. The scholarship program was established by Regent Emeritus Richard L. Griggs in honor of Provost Emeritus Raymond W. Darland. Scholarships, which cover the estimated cost of tuition for the academic year, are granted on the basis of academic achievement and leadership contributions to UMD.

### Alumni Scholarship Available

Alumni, check out the web link below. It describes a scholarship (non-resident tuition waiver) available to non-resident, non-reciprocity first-year students who have a parent or grandparent that graduated from UMD. Recipients of the scholarship pay current resident Minnesota tuition and the scholarship is renewable if the recipient is in good academic standing and making progress toward a degree.

<http://www.d.umn.edu/admissions/meritschol.html>



Student writers Eileen Harris and Lukas Sheild.

## Class of 2002

The 102<sup>nd</sup> Undergraduate Commencement for the University of Minnesota Duluth was held on May 18, 2002, at the Duluth Entertainment and Convention Center. The commencement address was given by Sheila Wellstone, wife and working partner of the late U.S. Senator Paul Wellstone. Chancellor Martin also presented her with the Chancellor's Distinguished Service Award for her leadership as an advocate against family violence. The following students were presented with undergraduate degrees in Biology:

### B.S. Biology

Stephanie J. Albertson  
Clayton I. Allen  
Jeffrey T. Anderson  
Dena L. Bauer  
Emily A. Beekmann  
Jeremy J. Bloomquist  
Nathan G. Bourassa  
Annie M. Bracey

# Undergraduate Commencements

[Since the previous newsletter was issued in the winter of 2002, there have been two spring commencements. Starting with the next issue, the *Life Scientist* will cover events in a single academic year.]

Michael C. Braun  
Joseph J. Brinkman  
Ann M. Brown  
Leith I. Brown  
Timothy A. Buck  
Benjamin J. Bungartz  
Katherine A. Carlson, *summa cum laude*  
Michael D. Cary  
Melissa C. Cook  
Paul A. Cutts  
Nicole A. Dallum  
Devon R. Dannen, *cum laude*  
Barry C. Fuchs  
Kelly M. Gall  
Kenneth E. Gard  
Robert A. Gillis  
Genevieve A. Gorny  
Erin M. Grubbs  
Angela K. Halgren  
Matthew J. Hanson  
Lee S. Henry  
Adam E. Hess  
Aaron J. Hokanson  
Sarah L. Huth, *summa cum laude*  
Dawn L. Iverson  
Christine A. Jerrick  
Angela L. Johansen  
Stefanie A. Johnson  
Kristin L. Kielsa  
Megan M. Kingsley  
Laura I. Kuiper

Melissa M. Kuntz, *magna cum laude*  
Andrew H. Larson  
Cory J. Larson  
Cynthia C. Leecy  
Michelle M. LeFaive  
David R. Maki  
Jeremy R. Marincel  
Venu Nayar  
Elizabeth A. O'Brien, *magna cum laude*  
Steven M. Olsen, *magna cum laude*  
Joseph A. Olson  
Carrie A. Quast  
Kevin L. Raasch  
Melissa A. Reibel  
William P. Roche  
Cristen A. Rother  
Elizabeth J. Ruther  
Chad J. St. Germain  
Sarah M. Schaak  
Tammy J. Schilling  
Erin M. Schreiber, *cum laude*  
John P. Schwalbe  
Chad D. Smith  
Bridget K. Soderberg  
Katherine A. Stephenson, *summa cum laude*  
Shaun P. Struntz  
Jilanne L. Tessmer  
John R. Thull  
Ann F. Torborg, *cum laude*  
Sara A. Vipond  
Joshua S. Ward

Allison L. Wiedemann  
Janelle J. Wiirre  
Lucas G. Wittwer  
Charles K. Zawaira

### B.S. Cell Biology

DeAnna M. Baer  
Seth M. Felice  
Megan E. Meade Gladen, *cum laude*  
Kevin D. Johnson  
Ruth A. Markwardt  
Kara L. Raymond  
David W. Schumann  
Christopher P. Zaub

### B.A. Biology

Matthew S. Baumgardner  
Jill N. Burgstahler  
Heather S. Hadley, *cum laude*  
Timothy P. McDonald  
Jamie A. Schreck

### B.A.S. Teaching Life Science

Alan C. Dewey  
Christen M. Jechorek  
Annie M. Lund  
Caroline L. Olson  
Edith A. Schilling, *magna cum laude*  
Michael J. Schlangen  
Mark J. Sherman, *magna cum laude*  
Lisa M. Stalker  
Shelly A. Vanyo

Congratulations...



## Class of 2003

The Duluth Entertainment and Convention center was the site of the 103<sup>rd</sup> Undergraduate Commencement of the University of Minnesota Duluth on May 17, 2003. The commencement address was delivered by David Zentner, a 1959 graduate of UMD, nationally recognized citizen conservation activist and athletics booster. Mr. Zentner was presented with an honorary doctorate by Chancellor Kathryn Martin. The following students were recipients of undergraduate bachelor's degrees:

### B.S. Biology

Nathan D. Anhorn  
Melissa E. Berg  
Joanna L. Blake  
Amanda D. Brotzel  
Leith I. Brown  
Lesley M. Caldwell  
Anna A. Christian  
Nicole A. Dallum  
Sarah L. Durland  
Thomas M. Dvorak  
Misty D. Eliason, *magna cum laude*  
Christopher P. Erickson  
Jeremy M. Erickson, *magna cum laude*  
Katrina E. Erickson  
Kari A. Euteneuer  
Brooke L. Feder  
Paul A. Fischer  
Melissa N. Girtz  
Katrina A. Hallgren  
Jennifer B. Hansen  
Eileen R. Harris  
Ruth A. Henriksen  
Clara B. Hill  
Rachelle M. Hoeft

Breanna L. Hoff, *magna cum laude*  
Tara M. Hoff, *summa cum laude*  
Andrew E. Johnson  
Anthony M. King  
Erica K. Kuchera, *summa cum laude*  
Nicholas R. Lamon  
Celestial-Dawn Lindquist  
Joelle G. Luebchow  
Katherine J. Lutterman  
Michele D. Manner  
Jane E. Mathiason, *cum laude*  
Michael B. Miskovich  
Melissa D. Mueller  
Stephanie J. Nelson  
Cory H. Netland  
John D. Notman  
Derek D. Nyberg  
Nicole J. Palm  
Daniel J. Peschl  
Melissa L. Peschman  
Sara L. Peterson, *cum laude*  
Sarah L. Pollema, *magna cum laude*  
Dustin J. Privette  
Mark A. Rasmusson  
Stefanie C. Reinhart-Medin  
William P. Roche  
John Rodgers  
Melissa J. Roering  
Jesse J. Roles  
Lenae M. Schaeffbauer  
Kimberly A. Scharenbroich  
John B. Schletty  
Michael R. Sedgwick  
Jeffrey F. Sellman, *cum laude*  
Stephen A. Skoge  
Nathan R. Slattengren  
Nathan J. Smischney, *summa cum laude*  
Andrea M. Sorenson  
Marty M. Spanish  
Stephanie L. Swanson  
Steven J. Swenson

Jason J. Thompson  
Christopher M. Walker, *summa cum laude*  
Luke O. Waller  
Jody L. Welty  
Karola A. Whitfield  
Maykue Yang  
Mason M. Disrude

### B.S. Cell Biology

Katharine M. Brauch, *cum laude*  
Jessica M. Ferrin  
Dana L. Fleming  
Shilpa Gupta  
Justin C. Haworth  
Christopher A. Johnson  
Ahanna M. Stone Juntunen  
Nathan D. Laposky  
Dain T. Meyer  
Ross W. Perko  
Jared R. Reese, *magna cum laude*  
Alyssa M. Sahlmen  
Ian W. Schwartz  
Justin A. Spanier, *cum laude*  
Angela M. Stainbrook, *magna cum laude*  
Tiffany J. Turnwall

### B.A. Biology

Kathryn J. Button  
Michael J. Fudala  
Laura J. Ricker  
Nicholas J. Swenson  
Anthony M. Wagner  
Melissa L. Warhol

### B.A.S. Teaching Life Science

Jennifer S. Rukavina Boelter  
Jeannette M. Guelker  
Jaime S. Hunter, *cum laude*  
Jason S. McNabb  
Lacey J. Scottum  
Benjamin G. Straka



# Student Clubs

## Biology Club

by Allison Bohlman

The Biology Club had another eventful year, beginning with an introductory meeting in September and starting out with bang at the annual camping trip to Gooseberry Falls during October. Our intramural softball team won many of its games this fall and had a great turnout of students! The Biology Club has enjoyed many activities throughout this past year including bowling weekly, curling, hiking, sledding, a bonfire, a trip to the Omnimax, and dinners at officer's homes. In early April, a group of 12 members journeyed to the St. Paul Science Museum for an exciting weekend.

The Club has actively raised money this past year with the group "Human-i-tees", which donates part of its profit to rainforest conservation. The club had two spring intramural all-women teams of soccer and field hockey. They played the men's leagues due to lack of other women's teams to compete against. Both teams have done their best to win and have had a lot of fun against their male opponents.

The Biology Club continued to serve the needs of the Biology Department at every seminar by preparing refreshments. We helped clean and modernize the display cases in the



*Biology Club Officers (Row 1, L to R): Madeleine Robins, Eileen Harris, (Row 2, L to R): Amybeth Froehlich, Becky Bolstad and Allison Bohlman. Not pictured: Erik Peterson, Krish Jayathilaka and Denise Gregoire.*

department and assisted at the big alumni reunion this last fall. It was a great year for everyone and the future officers are beginning to plan for a busy schedule next year. Officers during the past year were: President - Eileen Harris, Vice President - Rebekah Bolstad, Treasurer - Erik Peterson, Director of Membership and Activities - Madeleine Robins, Assistant Directors of Membership and Activities - Amybeth Froehlich and Krish Jayathilaka, and Undergraduate Representative - Denise Gregoire.



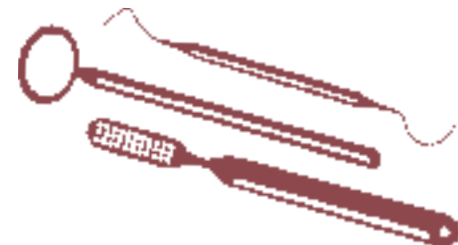
## PreDent Club

by Terese Kropski

The University of Minnesota Duluth's preidental club is an organization for students to come together and learn about various careers related to dentistry. This past year the chapter has built many new bridges that may lead to success for future members.

Many new members contributed to a productive year. Attendance for the club reached nearly 30 members. Even though this was the largest turnout in the club's history, it was also one of the closest-knit groups ever. Pre-Dental Hygiene students were welcomed into our club this year and these students contributed to the group by helping us all see dentistry from another aspect. This past year the club participated in numerous activities. Early in the fall, Gale Shea, the director of admissions from the dental school on the twin cities campus, traveled to UMD to answer students' questions. We also had a few UMD alumni, who are now first year dental school students, come and answer members questions both fall and spring semesters. Our chapter

participated in a co-ed intramural broomball team and had the most successful season in the club's history, ending up playing in the championship game. Many members also traveled to the University of Minnesota School of Dentistry's Career Day event. During this bi-annual event, students from all over the state, interested in dentistry or dental hygiene, are able to meet faculty, ask questions, and get a tour of the facilities. Our club participated in making a web site for the club, which is now linked to the UMD biology home page. Club officers for the past year were Terese Kropski – President, Jesse Roles – Vice President, Kim Scharenbroich – Secretary and David Farrar – Treasurer. The best thing about this club is getting to know other undergraduate students that share a passion for the field of dentistry. You meet many new friends that help guide you to getting your dreams accomplished. If you are interested in becoming a member of the club, please contact one of the club officers or our club advisor Linda Holmstrand, LSci 313, or email [lholmstr@d.umn.edu](mailto:lholmstr@d.umn.edu)



## PreMed Club

by Jared Reese

The PreMed Club has just wrapped up another exciting, and successful year. Our mission continues to be to provide a place for pre-medicine students to have fun, meet other pre-med students, and be educated about careers in health care, as well as the medical school admissions process.

We started out the year with a social gathering of pre-med students, which included fun, friends, and plenty of pizza! Over the course of the year we tried to meet once every two weeks. Among the highlights of the year were: a meeting with first year medical students from UMD Medical School complete with cadaver lab tour, a visit from Dr. Lillian

Reפש (also the club's advisor) who gave great information about what it takes to get into medical school, Christmas caroling at Aftenro and the Benedictine Health Center, and participation in the Relay for Life. Additionally, the club hosted speakers who helped students make informed decisions about future careers. These speakers represented many different careers in health care including chiropractic medicine, dermatology, emergency medicine, podiatry, radiology, and surgery. It was inspiring and uplifting to hear real health care professionals share what they love most about their professions.

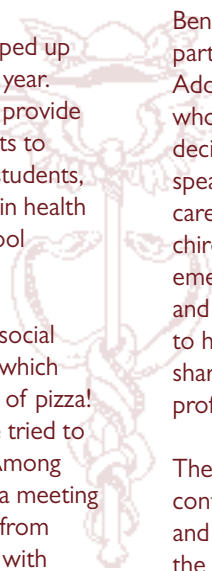
The Pre-med club has been, and will continue to be a place to have fun, learn, and help prepare students who will be the doctors of tomorrow.



## PreOptometry Club

by Deanna Wheeler

The PreOptometry Club met only once each semester to discuss optometry schools, the application process, courses to take, and possible job or volunteer opportunities. This is a fairly new club but membership has grown to about 10 members. The officers for the 2002-2003 school year were: President-Deanna Wheeler, Vice President - Melissa Roering, Secretary - Jeremy Trevis and Treasurer-Katrina Erickson. The club faulty advisor is Dr. Merry Jo Oursler.



## Senior Spotlight

by Eileen Harris

Each year, about 100 Biology graduates leave UMD and enter a new phase of their lives. The following sketches focus on four members of the class of 2003 and the paths that they will follow.

## PreVetMed Club

by Melissa Girtz

The PreVeterinary Medicine Club provides an opportunity for people with similar interests in animal medicine to meet each other and discuss related issues. It also exposes students to the veterinary field by participation in various activities. In the fall we kicked off the new school year with a picnic at the home of Raj Karim, the club advisor. Here, all of the new members and incoming freshman were able to meet and greet one another and get acquainted with the club officers. In October, the club participated in a pumpkin-carving event. During this occasion, the members were able to enjoy pizza and pop while designing their own pumpkins for Halloween. Once each semester, a few of the club's officers provided tutorial sessions on the admissions process to veterinary medical school. At these sessions the officers explained the possible obstacles that might be encountered during the

application process. A group toured the University of Minnesota Veterinary School, an annual event, and received a private tour of the facilities. This helped UMD students to become familiar with the school and some of its current students and faculty. The club also participated in a fundraiser by selling candy in the Biology Department Office.



PreVet Club Officers (L to R): President-elect Kirstin McKeown and President Melissa Girtz. Not Pictured: Erica Kuchera and Ann Liebl.

Anyone wishing to join the club for the 2003-2004 school year should contact the newly elected president, Kirstin McKeown at [mcke0217@d.umn.edu](mailto:mcke0217@d.umn.edu) or Raj Karim, the club faculty advisor.

somewhere near her hometown of Albany, Minnesota, where she will be able to see her parents and sisters more often.

After four years at UMD, **Eileen Harris** graduated with a Biology major and a Chemistry minor. She will be continuing her education next year at Minnesota State University, Mankato, where she

(Continued on page 20)

(Senior Spotlight continued from page 19)

plans to pursue a master's degree in environmental sciences. Eileen would like to eventually go into environmental education. Top activities for her this past year included the Biology Club, of which she was president for the 2002-2003 school year and involvement in Lutheran Campus Ministry. Eileen is originally from Waseca, Minnesota. Back home, she has her mother and stepfather, a brother and a sister with a brand new baby girl.

**Derek Nyberg**, from Cromwell, Minnesota, also earned a Biology degree with a Chemistry minor. He has been active in the Biology Club and Intersarsity Christian Fellowship during his time here at UMD. Derek is a well-rounded young man who likes a variety of activities including running, hanging out, watching bands and eating out. His family is a large part of his life as well. He has one younger and one older brother at home with his parents. After graduation Derek has no definite plans but would like to travel a bit, another

one of his pastimes. With his interest in anatomy and physiology along with his concern for people, he would like to go to graduate school in a healthcare profession.

Attending the Indiana University School of Optometry this fall will be the next step for **Katrina Erickson**. She graduated with a major in Biology and a minor in Psychology. A workout enthusiast, Katrina likes to swim, do aerobics and a variety of other sports. Her hometown is Cohasset, Minnesota where her parents and younger brother live. Katrina has worked at Target all four years of college and for the last two years has been a grader for physics classes. She chose optometry because she's always had an interest in helping people and optometry seemed interesting. After 3 years of classes in Indiana she will start a practicum rotation that will take her around the country. She hopes to eventually start her own practice.



## UROP Awards

The Undergraduate Research Opportunities Program (UROP) is a university-wide program designed to give undergraduate students and faculty members the opportunity to work together on research, scholarly or creative activities. Students must write a competitive grant, and if successful, receive a stipend of \$1400 plus \$300 for supplies and expenses. UROP provides students with out-of-class practical experience in the development and implementation of a project worthy of publication and presentation at professional meetings.

A number of Biology students presented their research at the annual National Conference of Undergraduate Research (NCUR) held in March in Salt Lake City, Utah. During the past year, 20 Biology students and 10 Biology faculty members participated in the UROP program. A list of recipients and their sponsors follow:

### Fall 2002

#### **Katharine Brauch**

"Proteomic Analysis of Membrane Fractions in Various Tissues of Hibernating Ground Squirrels"  
Sponsor: Matthew T. Andrews

#### **Michael Eskelson**

"Wing Variation as a Process of Speciation in *Eurosta solidaginis*"  
Sponsor: Timothy P. Craig

#### **Matt Kading**

"Identifying the Sources of *Escherichia coli* Bacteria using Patterns of Antibiotic Resistance"  
Sponsor: Randall E. Hicks

#### **Nichole Klatt**

"The Inhibitory Effects of Tea Plant Segments (*Camellia sinesis*) Alone, and in Combination with Antibiotics, Against Six Different Strains of Bacteria."  
Sponsor: M. Reza-ul (Raj) Karim

#### **Doug Schaff**

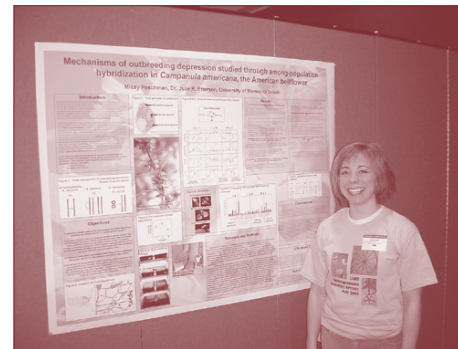
"Optic Nerve Regeneration in Fish"  
Sponsor: Allen Mensinger

#### **Kimberly L. Schoonover**

"The Effect of 2-ME on the AKT and p38 Pathways in Osteoclasts"  
Sponsor: Merry Jo Oursler

#### **Jessica Strange**

"The Effects of Gall Size on Parasitoid Wasp Ovipositor Length"  
Sponsor: Timothy P. Craig



Missy Peschma poses with her poster "Mechanisms of outbreeding depression studied through among-population hybridization in *Campanula americana*, the American bellflower" at the eighth annual Research/Artistic Fair held at UMD in May. Missy's faculty mentor is Dr. Julie Etterson.

**Tiffany Turnwall**

“Survey of Differentially Expressed Proteins from Active and Hibernating Thirteen-Lined Ground Squirrels”  
Sponsor: Matthew Andrews

**Christopher Walker**

“Differential Expression of STAR Protein in a Hibernating Mammal”  
Sponsor: Matthew Andrews

**Jody Welty**

“In Vitro Effect of Tea Plant (*Camellia sinensis*) Materials Against Melanoma”  
Sponsor: M. Reza-ul (Raj) Karim

**Ray Wickham**

“Biosorption of Lemna minor and Oligodynamic Action on Microorganisms Using Cadmium and Lead”  
Sponsor: M. Reza-ul (Raj) Karim

Spring 2003**Charlene Balcer**

“Genetic Factors Controlling Mammalian Hibernation”  
Sponsor: Matthew Andrews

**Margot A. Bergstrom**

“Illustration of Plant Diversity”  
Sponsor: John Pastor

**Rachel J. Beukema**

“Comparative Effects of Green Tea Extracts Alone and in Combination with Hypervalent Iodine and Benzoboroxole Derivation Compounds”  
Sponsor: M. Reza-ul (Raj) Karim

**Amanda Dawn Brotzel**

“Mariculture of the Toadfish, *Opsanus tau*”  
Sponsor: Allen Mensinger

**Daniel Delf**

“Understanding the Breeding System of *Solidago altissima*”  
Sponsor: Julie Etterson

**Michael Eskelson**

“Comparison of Mating Behavior Between Prairie and Forest Populations of Gallmakers and Their Hostplant Preferences”  
Sponsor: Timothy Craig

**Sarah J. Foltz**

“Genetic Divergence Studied through Hybridization”  
Sponsor: Julie Etterson

**Julie Glasscock**

“Study on Juvenile Hormone Biosynthesis Regulation”  
Sponsor: Anna Rachinsky

**Angela Merritt**

“Seasonal Patterns of Distribution and Abundance of *Bythotrephes longimanus* in Island Lake, Minnesota”  
Sponsor: Lyle Shannon

**Jessica E. Strange**

“An Analysis of Variance in Plant-Architecture and Insect Community in Tall Goldenrod (*Solidago altissima*) in Easter MN through the Growing Season”  
Sponsor: Timothy Craig

**Jeffrey Willging**

“Geographic Distribution of *Solidago altissima* Cytotypes Across the Prairie-Forest Border in Minnesota”  
Sponsor: Julie Etterson

## Biology Students Present Research at NCUR Meeting

A total of twelve undergraduates presented research at the National Conference on Undergraduate Research (NCUR), March 12-16 in Salt Lake City, Utah. Four of the students - Rachel Beukema, McKenzi Burmeister, Nichole Klatt, and Jody Welty, are Biology Students from the lab of Dr. Raj Karim.

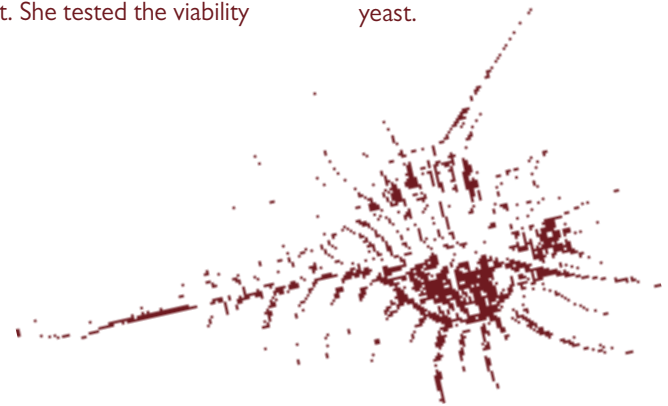
**Rachel Beukema** conducted an experiment entitled “The optimal concentrations of different sera on cell growth for BGMK and Vero Cell lines.” The two cell lines were tested using chicken, horse, lamb, cool calf, and fetal bovine serum. The purpose of these trials was to observe which cell line grows best with a given serum at a particular concentration.

**McKenzi Burmeister's** project “Comparative Long Term Analysis for Three Established Cell Lines: Vero, L929, and BHK-21.” was the continuation of a UROP project. She tested the viability

rates and monolayer formation times after cells had been frozen for allotted periods of time ranging from 0 days to six months after freezing.

**Nichole Klatt** tested the antiviral, antimicrobial and antifungal effects of different tea plant (*Camellia sinensis*) segments and combinations. She tested the antiviral activity against African Green monkey Kidney (Vero) cells infected with Herpes Simplex viruses, and the antimicrobial activity against many different bacteria, including *Streptococcus*, *Staphylococcus*, *Escherichia*, *Klebsiella*, *Bacillus*, and *Salmonella* species. She used *Candida* species to test the antifungal activity.

**Jody Welty's** worked with plant derived extracts of the plant *Camellia sinensis*. She used these extracts (drugs) on melanoma cell cultures, Herpes Simplex Virus Types one and two, bacteria, and yeast.



## First Annual Academy of Science and Engineering Award



Matt Andrews, Biology Department Head (left) and Dr. James Riehl, Dean of CSE (right), congratulate Dr. Jerome Klun on his award.

In September of 2002, the College of Science and Engineering established an Academy of Distinguished Alumni and presented five awards at a special dinner and award ceremony. The Academy was established to give public recognition to distinguished alumni and special friends of CSE who have distinguished themselves in their professional lives.

The Biology Department's inductee was **Dr. Jerome Klun**, an internationally recognized scholar who has conducted outstanding research on the chemical nature of host-plant insect resistance in corn. His accomplishments also include numerous citations and awards for research in the areas of insect chemistry and behavior, 114 peer reviewed publications and five patents. Dr. Klun has spent his entire career with the USDA and is currently a research entomologist at the USDA facility in Beltsville, Maryland.

"Jerry" Klun is a native of Ely, Minnesota, a graduate of Ely Junior College and received a B.A. degree in Biology from UMD in 1961. He went on to earn a Ph.D. in entomology at Iowa State in 1965. During his visit to campus in September, Dr. Klun presented a departmental seminar on the topic "SS220: A new repellent compound to fend off blood-feeding arthropods". This is a compound similar to DEET and other insect repellents on the

market and is undergoing test trials before its eventual use by military personnel and the public. Prior to the presentation, he reminisced about his days at UMD and showed several slides from his college days.... a view of the science building (now Chemistry) from College Avenue, another of the campus from the men's residence hall (now Vermillion hall) and a picture of himself dissecting a shark in his dorm room! He particularly recalled Biology faculty who were mentors and teachers at that time – Drs. Huai Chiang, Blanchard Krogstad, Ted Odlaug, Paul Monson and John Carlson.

Biology faculty, staff and students had a very enjoyable time visiting with Dr. Klun during the reception in Griggs Center. We congratulate him as a very worthy recipient of this honor and invite him back to visit us at any time in the future.

## Alumni News

**Kimberly Bigelow (B.S. '99)** was accepted into medical school at the University of North Dakota at Grand Forks and received the David Johnson Memorial Scholarship for Medical School.

**Michael Haedt (B.S. '96)** received his Doctor of Optometry from the University of Missouri, St. Louis, in 2001 and completed his residency in primary care optometry at the West Point Military Academy in the summer of 2002. He is serving as an optometrist with the U.S. Army. Mike and his wife Dianna have four children – Makayla, Jackson, Gabriel and Naomi.

**David Haugen (B.S. '96)** a naval reservist, served during the war in Iraq as a dentist aboard the USS Abraham Lincoln. David is a graduate of Duluth Denfeld and lives in West Duluth with his wife, Holly, and sons Zachery, 7, and Sebastian, 2.

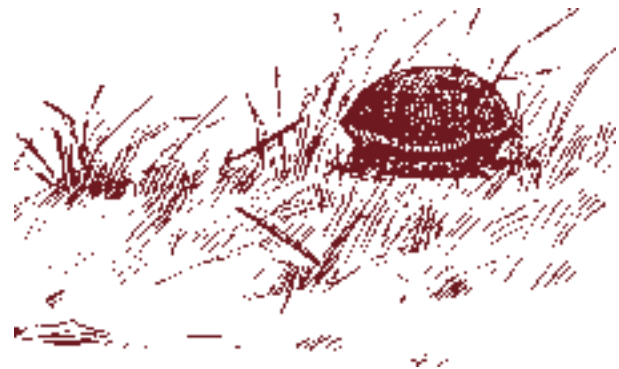
**Mary Karst (M.S. 2001)** was recently appointed division chair of the Math and Life Sciences Department at Brazosport Community College in Lake Jackson,

Texas, where she has been teaching biology classes. Mary was the UMD Biology Department's Outstanding Graduate Teaching Assistant for the 1999-2000 academic year.

**Megan Kingsley (B.S. '02)** has been accepted into the Acupuncture and Oriental Medicine master's program (MSAOM) at Bastyr University in Seattle and will begin classes in September, 2003. While in Washington, Megan has worked as a nanny, volunteered at a local hospital and enjoyed hiking and sightseeing. (Editor's note: Megan was the student editor of the '02 *Life Scientist*).

**Jason May (B.A.S. '99)** is teaching 7<sup>th</sup> grade Life Science and Health at Aitkin High School. He enjoys involvement in the science fair and also serves as the wrestling coach.

**Christina Miller (M.S. 2002)** is a fulltime lab manager and adjunct instructor at North Hennepin Community College, where she serves microbiology, anatomy and physiology, and general biology labs as well as



teaching a variety of courses. Christie has been involved with incorporating technology into the labs and revising lab manuals. Her husband Steve (M.S. Chemistry '02) has completed the first year of his Ph.D. program at the U of M twin cities campus.

**Suzanne Z. Nordin (B.S. '90) and Michael W. Nordin (B.S. '89)** reside in Antigo, WI, where Sue is a family practice physician with a special interest in complementary medicine in rural areas. Mike is employed by the Wisconsin DNR. They have two children – Anna, 6, and Ryan 4.

**Gloria “Jean” (Ness) Thompson (B.A. '69)** lives in Anchorage, Alaska with her husband Dick Thompson (B.S. Education '68, who also played UMD Varsity Hockey '64 – '68). They have three adult children – Kristine, living in Oslo, Norway – Erica in Tacoma, Washington and Ryan in St. Paul, Minnesota. Jean works part-time at the University of Alaska, Anchorage, and enjoys the wilderness and outdoor activities of Alaska.



## A Face from the Past

Who is the “mystery Biology graduate student” pictured here? If you can identify her, send the name to Linda Holmstrand, Editor, *Life Scientist*, 211 LSci, 1110 Kirby Drive, Duluth, MN 55812-2496 OR email [lhalmstr@d.umn.edu](mailto:lhalmstr@d.umn.edu). Your name will be put in the hat for a drawing to be held September 30, 2003. The winner will receive 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!

By the way, the “Face From the Past” featured in our last newsletter was Dr. Isabel Ahlgren, a Biology faculty member in the late 60’s. She was correctly identified by a number of people, but the winner, drawn from the hat, was Bonnie Dinehart of Carlton. She received a copy of “UMD Comes of Age”. Bonnie was formerly the supervisor of our UMD greenhouse. Congratulations, Bonnie!



## Gifts and Donations

The University is currently operating in an environment of reduced budgets and painful cutbacks. Despite these conditions, we strive to maintain our excellence in teaching and research as well as service to students and recognition of their achievements. Through the donations of alumni and friends, we can continue to offer student awards and scholarships, sponsor undergraduate research, publish and mail our annual newsletter and support other valued programs. The Biology Department would like to acknowledge the following individuals for donations received during the period January, 2002 through May, 2003. Thank you for your support and your financial gifts. They are greatly appreciated by the students, faculty and staff.

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Class of 19 \_\_\_\_\_ Class of 20 \_\_\_\_\_ EMAIL ADDRESS \_\_\_\_\_

UMD DEGREE  MS  BS  BAS  BA

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

TO \_\_\_\_\_

## The Life Scientist 2003

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

EDITOR	Linda Holmstrand	STUDENT	Eileen Harris
STUDENT	Eileen Harris	CONTRIBUTORS	Lukas Sheild
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