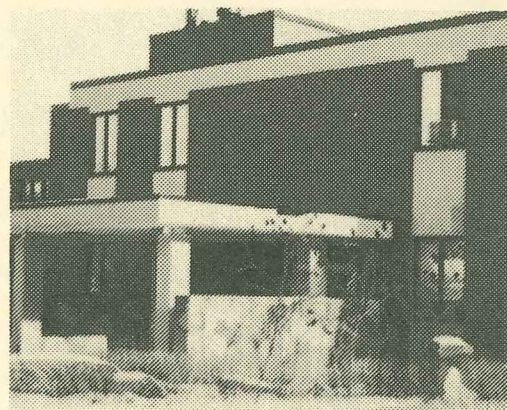
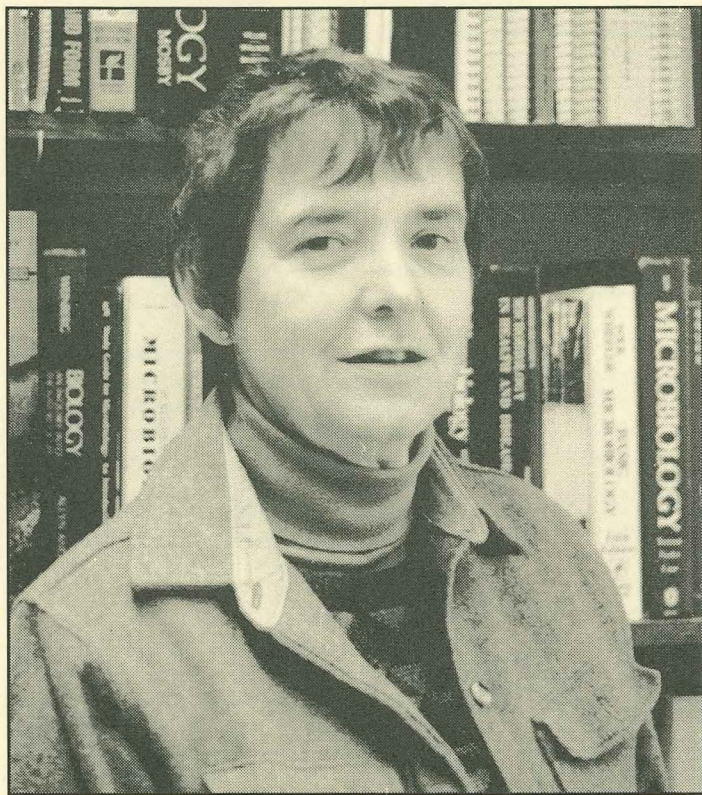


the
Life Scientist

UMD Biology Department News



Helen Hanten to Retire in May



Helen Hanten

Helen Hanten is retiring at the end of May after 26 years at UMD. She has taught a variety of courses both at UMD and through the Continuing Education and Extension and has been the faculty advisor for a large number of pre-nursing students as well as some Biology majors.

Ms. Hanten grew up and completed high school in the Upper Peninsula of Michigan and attended the University of Wisconsin in Madison. She was a registered Medical Technologist and certified as a secondary science teacher in Minnesota before coming to UMD as a faculty member in 1966. She completed an M.S. in Botany at UMD in 1975. From 1976-1981 she operated the greenhouse at UMD and was returned to full-time teaching as an assistant professor in 1982.

Research interests have included development and abscission of the grain in wild rice, Zizania aquatica which was of particular interest during the time of paddy grown wild rice development.

Ms. Hanten has been the editor of the Life Scientist, the Biology Department newsletter since the first issue in 1987.

She has been the department's representative to the UEA representative council for several terms, and served one term on the UEA Executive Committee. She has been a long time member of the Faculty Advisory Committee for Women (FACW) which was established by the Rajender settlement as a committee to help women evaluate their progress and treatment in the University workplace environment. She was appointed to the system wide Commission on Women from its beginning, and is currently representing CSE on the UMD Commission on Women. She also served for some years as an Entry Level Officer in claims of sexual harassment, and now serves as an advisor to those who are either claimants or respondents in such claims.

Ms. Hanten taught in Birmingham, England in the UMD Study in England Programme in Spring 1988 and again in Fall 1990. She and her husband, Paul, who retired from the Duluth News Tribune in 1988, hope to visit the U.K. again and to see more of Europe. They plan to continue living in Duluth, and spending time with their children and grandchildren will always be a priority.

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Happenings in the Department

Faculty and Staff — 1991-1992

Faculty:

George E. Ahlgren, Associate Professor
Colleen M. Belk, Teaching Specialist
Janet S. Boe, Lecturer
Donald P. Christian, Professor
Sylvio G. Codella, Teaching Specialist
Hollie L. Collins, Professor
Conrad E. Firling, Professor
Helen B. Hanten, Assistant Professor
Stephen C. Hedman, Professor
Anne E. Hershey, Associate Professor
Randall E. Hicks, Assistant Professor
Linda L. Holmstrand, Associate Professor
Larry D. Hufford, Assistant Professor
M. Raj Karim, Professor
Andrew R. Klemer, Professor
Paul H. Monson, Professor Emeritus (Herbarium)
Gerald Niemi, Associate Professor
David J. Schimpf, Associate Professor & Head
Lyle J. Shannon, Research Fellow
Melbourne C. Whiteside, Professor

Staff:

Doug Fairchild, Junior Scientist
Ruth Hemming, Senior Secretary
David Janssen, Junior Scientist
Phyllis Jensen, Accounts Supervisor
Mike King, Junior Scientist
Nancy Kirsch, Senior Laboratory Technician
Courtney Kowalczak, Junior Laboratory Technician
Jason McCrea, Junior Scientist
Bette McNamara, Laboratory Service Coordinator
Paul Mickelson, Junior Scientist
Deb Shubal, Senior Research Plot Technician

Student Accepted in New Toxicology Program



Patty Lear

When Patty Lear, a senior Biology major was looking for a research project, she mentioned she fishes the St. Louis River and was concerned about the problems with the water. Dr. Steve Hedman of the Biology Dept. suggested she talk to Dr. Ken Wallace of the Dept. of Pharmacology of the Medical School. She did. Patty is now working in a Pharmacology lab under Dr. George Trachte, and she decided to apply as a student in the University of Minnesota PhD program in toxicology. The program has been set up so that students can focus in either environmental or biomedical toxicology. Patty is interested in both. She said she is fascinated by the mechanisms of receptors and uptake by cells. She wants to learn what makes something toxic. She says the program is definitely for research orientated people and she thinks it is one of the most important and applicable fields one could pursue now. Dioxins, mercury, and PCBs are all local problems of toxic chemicals in water.

The good news is Patty has been accepted for the program, the first PhD program where students can do their work totally in Duluth. Congratulations Patty!

SEMINARS

The fourth Jack R. Hargis Lecture was delivered in May of 1991 by Dr. Eville Gorham, Regents Professor in the Department of Ecology, Evolution, and Behavior, and the Department of Plant Biology on the Twin Cities campus. Dr. Gorham, one of the world's great experts on peatlands, spoke on "Northern Peatlands: Role in the Carbon Cycle and Probable Responses to Global 'Warming'". His article on the same subject was published in the journal Ecological Applications during the same week. A special reception followed his talk. This lecture series is sponsored by contributions from friends, alumni, and faculty, and commemorates former faculty member Jack Hargis, who died in 1984 at the age of 34.

There are four remaining seminars by graduate students this spring. All are at 3:00 p.m. on Fridays in Room 142 Medical School. Coffee and cookies precede each seminar, and all are welcome to attend.

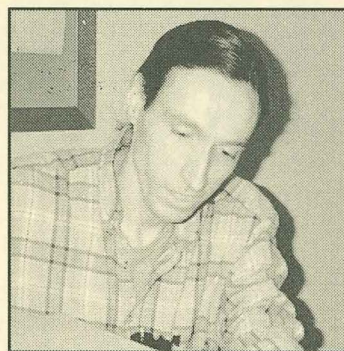
April 24, Michelle Kuns, "Spatial and Temporal Distributions of Zooplankton Populations in Lake Superior".

May 1, Mike Mageau, "The Combined Effects of Turbulence, Carbon Concentration and Nitrogen Form on Competition between Bloom-Forming Cyanobacteria and Green Algae".

May 8, Roland Sigurdson, UMD Biology Department and Minnesota Cooperative Fish and Wildlife Research Unit, "The Effects of Navigation-Induced Shear and Turbulence on Early Life History of Selected Upper Mississippi River System Fishes".

May 15, Marlys Reuvers, "The Effects of Mechanical Thinning of Aspen on Small Mammal Populations and Communities".

Focus on Botanical Research



Gary Walton

Amid the many Biology majors who are in pre-med sequence of coursework, and others who are focusing on environmental biology usually with a fresh water emphasis, there are a few with their interests clearly in the study of plants. Gary Walton began an independent study doing cladistic analysis of the genus Dicentra, under the direction of Dr. Larry Hufford. In November Gary was awarded a UROP grant to support his research and is now focusing on "Architecture and development of the short system of Dicentra cucullaria (Dutchman's breeches)." While Gary has had a life long interest in plants as a hobby, he says he looks at plants differently now, and the project provided him a way to learn how to do research.

Gary's methods involve producing a map sketch of a plant specimen, and then using microtechniques to

Continued on Page 4

Happenings in the Department

From the Department Head

The number of students majoring in Biology at UMD has grown rapidly in recent years, at a much greater rate than that of the total students on campus. The Biology Department always strives to serve students better, even at a time when we are serving more of them. Many of the readers of this newsletter have helped us in this regard. As in past years, 1991 saw generous contributions from friends and alumni to the Biology gift account and the Jack Hargis Lecture Fund. Last year the Biology gift account supported the T. O. Odlaug Award for outstanding undergraduate Biology majors (see page 4), this newsletter, and the purchase of a camera for instruction and research. The lecture fund sponsored the visit by Dr. Eville Gorham, Regents Professor on the Twin Cities campus (see page 2). What follows is a list of those whom our records show as having made donations that arrived in 1991. The faculty, students, and staff are most grateful for their philanthropy. Contributions may be made at any time to the Development Office, Darland Administration Building, UMD, Duluth 55812, earmarked "Biology Department" or "Hargis Fund".

David Bearman, Memphis, TN
Edward Bersu, Madison, WI
Beverly Cackoski, Hibbing, MN
Margaret Dooley, Tuttle, OK
Mary Ebert, Cincinnati, OH
Joy Eskuri, Rochester, MN
Carol Farchmin, Duluth, MN
Mitchell Forstie, St. James, MN
Dorace Goodwin, Brainerd, MN
Gregory Hansen, Duluth, MN
Bruce Highland, Jr., Two Harbors, MN
Kara Jacobs, North Highlands, CA
David Jarecki, Cloquet, MN
Donn Johnson, Fayetteville, AR
Gary Johnson, Northfield, CT
Julie Jordan, Hibbing, MN
Richard Kargel, White Bear Lake, MN
John Kohlstedt, Finland, MN
Edward Lance, Rochester, MN
David Lurye, Winter Park, CO
Joseph Mayasich, Somerset, NJ
Beth Middleton, Carbondale, IL
Teresa Norberg-King, Duluth, MN
Lawrence Peterson, Saginaw, MN
Tom Porter, Charleston, SC
Steven Rue, Lafayette, CO
Mark Schaberg, Maplewood, MN
Barbara Sheedy, Duluth, MN
Daniel Sherry, Ellsworth, WI
Debra Swanson, St. Paul, MN
Lloyd Turtinen, Eau Claire, WI
Peggy Wallgren, Lakefield, MN
Steven Wilkowski, Aitkin, MN

David J. Schingel

Don Christian will be taking a sabbatical leave during the 1992-93 academic year. During his leave, he will study relationships between forest management-forest structure and diversity of small mammals in northern Minnesota. He received a Bush grant to support the sabbatical leave, and will be working on several externally funded projects.

Conrad Firling and Anne Hershey were two of only 18 faculty from throughout the University of Minnesota system to be honored with Bush Sabbatical Program awards during 1991-92. The program provides financial support for faculty who take a leave of absence from teaching, advising, and service to pursue scholarly work that will later benefit undergraduate education. Dr. Firling is spending the year at the Mayo Graduate School in Rochester, Minnesota, investigating various influences on the development and maintenance of bone tissue. Dr. Hershey is using UMD's own Natural Resources Research Institute as a home base for studying the effects of salmon migration on stream ecosystems along Lake Superior's north shore.

The department had more than its usual level of instructional help from temporary faculty during the 1991-92 academic year. Colleen Belk taught General Biology, Vertebrate Embryology, and Cellular Biology. Colleen received her B.S. from Wisconsin-Madison and M.S. from Mankato State. Janet Boe taught General Biology and Plant Taxonomy. Janet holds the B.S. from North Dakota, M.S. from Minnesota-St. Paul, and Ph.D. from North Dakota State. Chip Codella taught Introductory Entomology, Animal Diversity, and General Ecology Laboratory. Chip is completing a Ph.D. at Wisconsin-Madison after receiving a B.S. and M.S. from Rutgers-Newark.

Dr. M.R. "Raj" Karim became a member of the Biology Faculty in 1991. Dr. Karim came to UMD as Associate Vice Chancellor for Academic Administration. Although this is a fulltime administrative responsibility, he has presented guest lectures in General Microbiology and is continuing microbiological research. A native of Pakistan, Dr. Karim received the M.S. at Minnesota-St. Paul and Ph.D. at Montana. Prior to coming to UMD, he served on the faculty at Wisconsin-Eau Claire and Northern State (South Dakota), and as an academic administrator at West Chester (Pennsylvania).

Conrad E. Firling, Professor of Biology, presented two research posters at the Thirteenth Annual Meeting of the American Society for Bone and Mineral Research, San Diego, California, August, 1991: "Ros 17/2.8 Osteosarcoma cell cultures exposed to aluminum, fluoride, or aluminum plus fluoride" co-authored with Pam K. Elf, Thomas, E. Huntley, and Arlen R. Severson and "The influence of aluminum and citrate on embryonic bone calcification", co-authored with Kristin Sufka, Michelle Marko, Thomas E. Huntley and Arlen R. Severson.

During spring quarter, Dr. Gerald Niemi of UMD Biology and the Natural Resources Research Institute (NRRI) seems to wear two hats and do two jobs. Spring is the quarter he teaches Ornithology, an upper division and graduate level course about birds. And as usual, he attends department meetings, serves on the Graduate Faculty Committee and is the adviser for a number of biology graduate students (see page 5). The bulk of Jerry's time, however, is spent at NRRI as the Director of the Center for Water and the Environment. Current projects are diverse and involve a large number of colleagues as co-investigators and research collaborators.

Undergraduate Education

T. O. ODLAUG AWARD

The 1991 T. O. Odlaug Award for the outstanding student in biology was presented to both Brian Johnson and Ed Reese. The criteria for this annual award, named after our former longtime department head, are outstanding scholastic achievement and service to the Biology Department. The Biology faculty choose the awardees, who receive a reference book of their choice and engraving of their names on a plaque displayed in the Life Science Building. Both of this year's winners were active in service functions and undergraduate research. Brian, from Scandia, MN, received a B.S. in Biology and is now a medical student at Johns Hopkins University; he chose to receive Atlas of Human Anatomy. Ed, from Northfield, MN, received a B.A. in Biology and is now a graduate student at Washington State University; his choice was The Encyclopedia of Mammals.

UROP Awards

Congratulations to the students whose proposals to the Undergraduate Research Opportunities Program (UROP) were chosen for funding! A UROP award carries a stipend of \$750 and an expense allowance up to \$250, depending on the nature of each project. Students must collaborate with a faculty member when designing and implementing their projects. Two students were chosen in November, 1991, who had advisors in the Biology Department: Christine Jankovich (Dr. Randall Hicks) whose topic is "Temperature Study of Lake Superior Bacteria" and Gary Walton (Dr. Larry Hufford) who is studying "Architecture and Development of the Short System of Dicentra cucullaria".

Junior biology major, Theresa Hill, has received a University of Minnesota Undergraduate Research Opportunity Award (UROP, \$750) and a College of Science and Engineering Summer Research Stipend (\$2000) to conduct research in Dr. Conrad Firling's laboratory. She is investigating the influence of aluminum compounds on embryonic bone histology and systemic factors known regulate bone formation and resorption. Ms. Hill will present a portion of her experimental studies at the Sixth National Conference of Undergraduate Research (NCUR), Minneapolis, Minnesota, March 25-28, 1992.

BIOLOGY CLUB NEWS

The Biology Club officers for the 1991-1992 school year are president Tami Elton, vice president Angela Knutson, Secretary Cara Knutson and treasurer Tom Hitchcock.

One of the club's important activities is serving cookies and coffee at departmental seminars, as a service to the department.

In serving biology students, the club maintains a club room as a resource center which includes information on biology courses and graduate school information.

The Biology Club had a T shirt sale this year. The shirts have an ecology theme. The money raised has gone to various activities which will include a spring camping trip.

Congratulations 1991 Graduates!

B.S. Degree in Biology

Gretchen Allie
Mark Anderson
Tami Bennet
Jeffrey Bieter
Daniel Brekken
Thomas Brennan
Amy Carney
William Crandall
Matthew Crawford
Darwin Dalen
Lisa Dawson
Daniel Ecklund
Erica Eichhof
Douglas Fairchild
Debra Favre
Joheen Finken
Denise Ginergy
Mark Gujer
Diane Harrison
Randy Hedin
Brian Johnson
Joseph Keranen
Patrick Klun
Scott Larson
Janelle Lauer
Ronna Lee
Kristine Leonard
Timothy LeSage

Troy Lund
Richard Meloin
William Merrill
Paula Moser
Noelle Nelson
Joyce Obermann
Terence Pedersen
Brett Reilly
Robert Scheller
William Schutt
William Schutt
Maureen Shannon
Karen Simon
Jill Spoden
Robert Stendahl
Russ Sticha
Kristin Sufka
Karen Techau
Traci Taemert
John Tonsager
Michael Torbenson
Russell Turner
Jeffrey Vespa
Patrick Warner
Craig Wilson
John Wheeler
Shannon Wright
John Zenner

BAS Degree: Teaching Life Science

Joel R. Peterson

B.A. Degree in Biology

Cherie Berglund
Robert Gerenz
Jill Kayava
Ed Reese III

From Page 2

prepare and study sections of the plant body. Of special interest are the buds that occur on an underground stem system, on swollen leaf bases of rudimentary leaves. Gary is a senior who will be at UMD another year continuing with this project, which may, when all the information is put together, provide some information on the pattern of development, with evolutionary significance.

Dr. Larry Hufford is especially interested in Dutchman's breeches because it was the first wild flower he learned to identify. Larry is interested in diversity and says that to comprehend diversity one has first to develop an evolutionary hypothesis. He is using computer based methods to analyze data and develop his hypotheses. Once an hypothesis is developed, his next question is "what are the processes and how do processes lead to patterns of diversity?" Larry has lots of projects underway. He traveled south early in spring quarter to collect pitcher plants and hydrangas, and during the summer will be going to England to study plant specimens at the British Museum Herbarium and at Kew Garden in London.

National Conference on Undergraduate Research

Three UMD Biology Majors participated in the 6th Annual National Conference on Undergraduate Research held this year at the University of Minnesota, Minneapolis, March 26-28. Students from all over the country presented reports of research, 353 in the form of posters, and 855 in oral twenty minute presentations.

Theresa Hill presented a poster on work done under Dr. Conrad Firling, entitled "The effect of aluminum citrate on embryonic bone formation." Her results support the hypothesis that aluminum citrate treatment perturbs embryonic bone formation by an early inhibition of the calcification process.

Bryan Nelson has double majors in biology and chemistry. His poster presentation was on a chemical research project done under Dr. Vincent Magnuson of the UMD Chemistry Department. The research involved using xray defraction and a series of computer programs to determine the molecular structure of a heterobimetallic transition-metal complex.

Christine Jankovich, reporting on research done under the direction of Dr. Randall Hicks, gave an oral presentation entitled "Thermal Control of Bacterioplankton Production and Metabolism in Lake Superior". The data from her work indicates that heterotrophic bacterioplankton in Lake Superior usually grow and metabolize selected organic compounds at in situ temperatures that are lower than the optimal temperatures for these processes.



Marlys Reuvers
Outstanding TA Award

Marlys Reuvers, who was a first year graduate student and teaching assistant at the time, received the 1991 award for outstanding Biology TA. Marlys is focusing on environmental biology under the direction of Dr. Don Christian. She has had extensive experience as a teacher, a guide for wilderness outings, and supervising student volunteers in summer work at Voyagers National Park. Congratulations, Marlys!

Papers to be Published

Several UMD graduate students who have worked in arctic Alaska on the Toolik Lake, Alaska study site under the direction of Dr. Anne Hershey, will be having their thesis work published as part of a special issue in Hydrobiologia, a journal of aquatic research published in Europe. These former students include Glenn Merrick, Debra Hinterleitner-Anderson, Andrew Goyke, and Kristi Hanson.

Graduate Students' Research

Current UMD Biology graduate students working on thesis research under Dr. Gerald Niemi of NRRI and UMD Biology are Rita Hawrot, Kent Montgomery, Carol Pearson, and Oksana Pieterman. Dr. Niemi joined the

faculty of the Biology in conjunction with his accepting the position of Director of the Center for Water and the Environment at NRRI. He teaches the ornithology course for the department in addition to serving as an advisor for graduate research.

Rita Hawrot, B.S. W.Va. U., is doing research on "Edges and bird species composition in northern hardwoods forests of Wisconsin and Michigan."

Kent Montgomery, B.A. U Montana, is studying "Predicting presence and absence of selected bird species using satellite imagery."

Carol Pearson, B.S. UM Twin Cities, is doing her research on "Landscape context in habitat selection by Minnesota breeding bird communities."

Oksana Pieterman, B.A. Alfred U, is studying "Food habits and landscape habitat use by Red-winged Blackbirds."

Biology graduate students who have recently completed their research under the direction of Dr. Niemi include:

Rebecca Boley, who studied the "Effects of methoprene on site fidelity and reproductive success of male Red-winged Blackbirds." Becky is currently working at the University of Hawaii, where her husband is stationed as a naval officer in Honolulu.

Susan Olson, who studied "Habitat heterogeneity and bird species composition in wetlands of central Minnesota."

Patrick Collins, who studied "Relationships between invertebrate food biomass and bird abundance in northern Wisconsin forests." Pat is currently working at NRRI as an assistant scientist on a variety of bird-related projects.

Connie Schwegman has worked in a variety of areas since earning her BA in Biology at the College of St. Catherine in 1978. She has worked in research related to human health at the Mayo Clinic and at VA hospital and for a biotechnology firm. After earning teaching certification she moved from the T.C. to Duluth in 1991. Now she is combining her interest and ability in teaching with a long time interest in environmental biology, specifically aquatic ecology and issues related to Lake Superior. Under the direction of Dr. Mel Whiteside, Connie is pursuing an MS degree, with a graduate assistantship through the Minnesota Sea Grant Extension Program. She is involved in outreach activities related to studies of Lake Superior and has given talks and slide presentations on the invasion and implication of the zebra mussel and other exotic aquatic species.

John Wheeler is in his first year as a graduate student after earning his BS at UMD. As an undergraduate he received UROP awards the last two summers to do research under Dr. Anne Hershey in her stream ecology project in the Arctic. John will be presenting a talk at the NABS meeting in Louisville this spring on this research. His talk is entitled: "The Effects of a Predatory Caddisfly on Prey Density."

Scott Stai is in his second year as a biology graduate student at UMD. His area of interest is forest ecology, and under the direction of his advisor, Dr. David Mladenoff of the Natural Resources Research Institute (NRRI), he is doing his thesis research on "Coarse woody debris in the old growth forests of northern Minnesota."

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Graduate Studies

The Graduate Program in Biology offers study leading to the M.S. degree with or without thesis. The degree is awarded by the Graduate School of the University of Minnesota. The program draws its faculty from the Department of Biology, the School of Medicine, and the Natural Resources Research Institute, all part of the Duluth Campus of the University.

PLAN A -- This program is research-oriented, and recommended for those who wish to concentrate on some specific aspect of biology (Botany, Cellular and Physiological Biology, Environmental Biology, or Zoology). Requirements include coursework in one of these four areas of concentration and in a minor or related field, plus the thesis.

PLAN B -- This program serves those seeking a background in a greater variety of subjects. More course credits are required than for the Plan A, and one of these must be in non-Biology courses. One or more Plan B projects must also be completed.

The Graduate Program in Biology draws its faculty from the Department of Biology, the School of Medicine, and the Natural Resources Research Institute. Faculty other than those from the Biology Department include:

Alice Adams-School of Medicine-Molecular Biology

Richard Axler-NRRI-Aquatic Ecology

David Battaglia-Cell Biology

Stephen Downing-School of Medicine-Cell Biology

Donna Forbes-School of Medicine-Neurobiology

George Host-NRRI

Richard Leino-School of Medicine-Cell Biology and Histopathology

Michael McDonald-Chemical Engineering-Ecology of Fishes

David Mladenoff-NRRI-Plant Ecology

John Pastor-NRRI-Ecosystems Ecology

Lillian Repesh-School of Medicine-Bio med Anatomy

Carl Richards-NRRI

Arlen Severson-School of Medicine-Cell/Developmental Biology

Congratulations Graduates!

Graduate students who have completed requirements for the MS degree since the last newsletter, and their thesis (or seminar) titles are:

Pat Collins "Relationships between invertebrate food mass and bird abundance in northern Wisconsin forests."

David Conner "Food of Salmonids in Western Lake Superior, 1984-86."

Jack Erickson "Marking the bait leech, Nepheleopsis obscura, for mark-recapture analysis."

Ivy Foo "Paleo-molecular biology: the study of ancient DNA."

Bonnie Hatten "Cytogenetic studies on the white sucker, Catostomus commersoni."

Mark Hermeling "Microhabitat use in sympatric Peromyscus maniculatus and leucopus."

Graduate Students

Twenty nine new and returning graduate students were in attendance this year. Nearly all are either teaching assistants or research assistants, or else are in final stages of their program. In attendance are:

Peter Aas

Nan Allen

Heather Brient

Karen Ellingson

Tracy Galarowicz

Cal Harth

Rita Hawrot

Randy Hedin

Michelle Kuns

Mike Mageau

Kent Montgomery

Susan Olson

Dave Pascoe

Carol Pearson

Oksana Pieterman

Charles Rose

Marlys Reuvers

Jeff Schuldt

Beth Schneider

Connie Schwegman

Ann Sigford

Roland Sigurdson

Scott Stai

Mark Tapper

Jo Thompson

Grace Tinderholt

Dan Weaver

John Wheeler

Joe Whittaker

Graduate Students' Research From Page 5

Mark Tapper who has research interests in virology started graduate work at UMD under Dr. Randall Hicks in December 1991. In previous work at the Medical College of Wisconsin he authored and had three papers published on medical virology.

Joe Whittaker who is in his second year at UMD is focusing his interests on mammalian ecology and habitat use. His adviser is Dr. Don Christian. The title of his thesis is "Impact of Plains Pocket Gophers (Geomys bursarius) on Meadow Voles (Microtus pennsylvanicus)."

Papers published together with others are: A breeding bird census at Itasca State Park, coauthored by Rebecca Sladek and Karen Noyes: "Mature Red Pine Forest with Deciduous Understory," in the Journal of Field Ornithology, Winter 1991. He also contributed to an article by David Blockstein, "A Quantitative Assessment of Four Breeding Bird Communities of Itasca State Park," in

The Loon, Vol. 63. He is still waiting for the publication of "Factors influencing Meadow Vole, Microtus pennsylvanicus, distribution in Minnesota, by Canadian Field Naturalist. This was coauthored with Eric List, John Testor, and Don Christian. He also gave a presentation on bats to a group of local scouts.

Michelle Kuns began as a research assistant with Dr. Mel Whiteside in June of 1990 and started graduate studies at UMD that fall. Her thesis research is on spateal and temporal distribution of zooplankton in the western arm of Lake Superior. In the fall of 1991 she received an award for the best student presentation at the Lake Superior Biological Conference held at Michigan Tech. In February she presented a poster at the American Society of Limnologists and Oceanographers in Santa Fe.

Roland Sigurdson, who is also working under Dr. Whiteside, is interested in areas of aquatic

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Graduate Studies

Graduate Students' Research

From Page 6

ecology, ecosystems and interactions and environmental impacts caused by human interactions. He was also a presenter at the Lake Superior Biological Conference, and at the American Fisheries Society: Early Life History Section in Providence, RI. His seminar to be presented this spring is on "The Effects of Barge Traffic Induced Shear and Turbulence on the Early Life Stages of Upper Mississippi River System Fishes."

Beth Schneider started graduate studies this year after earning her B.S. degree at North Dakota State University. Under the direction of Dr. Conrad Firling she will be conducting thesis research on the effects of aluminum on the rate of bone development and morphology.

Karen Ellingson who earned her B.A. at Concordia College in Moorhead, worked various places as a medical technologist before coming to UMD this fall. Her interests are in cellular biology and Under Dr. Lillian Repesh, is studying cell adhesion and cancer metastasis. Karen has served as a teaching assistant in human anatomy, general biology, and elements of microbiology.

Ann Sigford, who began her masters degree program this year under the direction of Dr. Mel Whiteside, already has eighteen years of experience as an environmental educator.

She worked as interpretive naturalist and then manager of Wood Lake Nature Center in Richfield, Minnesota. She has University of Minnesota degrees in wildlife management and education, has written many articles and two children's books on the environment. She is president of the Minnesota Naturalist's Association and founder of Minnesota Environmental Education Administrators group. The Superior Lakewatch, a program being developed under the research component of the Lake Superior Center is the subject of Ann's plan B Masters project. Ann speaks Swedish and enjoys meeting other Swedish speaking people. She even led a bird watching tour to Sweden!

Tracy Galarowicz came to UMD in the fall of 1991 after earning her B.S. degree at St. Norbert's College. She is focusing on aquatic ecology under

Dr. Anne Hershey and is planning thesis research on "the effect of slimy sculpin removal on chironomid populations in an arctic lake".

Heather Brient grew up in Ohio and received a Bachelor of Fine Arts degree in Theater from Ohio University in 1985. In 1988 she returned and under the advisement and inspiration of Dr. William Hummon in the Department of Zoological and Biomedical Sciences, she did an undergraduate thesis project in marine biology, studying a marine gastrotroch Musselifei profundus. Her abstract was published in the proceedings of the American Zoological Society, and she is presently working with Dr. Hummon in getting a different paper published. She completed her B.S. degree at O.U. in 1991 and began graduate studies at UMD that fall, under the direction of Dr. Don Christian. Her major interest in mammalogy with a focus on physiological ecology.

GRADUATE ALUMNI NEWS

Arlene Rothstein Gokee, M.S. 1988, is in her first year of a Ph.D. program at Colorado State University, Zoology department. Her research is on habitat fragmentation. Address: 110 Redstone Lane, Bellvue, CO 80512.

Nancy Rusinko Tich, M.S. 1985, Ph.D. 1989, has moved to Deerfield, Illinois where she is a clinical research associate with Abbott Laboratories. Her husband, Stephen will be joining her there this spring and will be starting a position with G.E. Capital. Address: 816A Chestnut Station, Deerfield, IL 60015.

John Krenz, M.S. 1988, is working in a Ph.D. program in ecology at the University of Georgia, Institute of Ecology. His research is on ecological genetics and population biology of the marbled salamander. Address: Savannah River Ecology Laboratory, Drawer E, Aiken, SC 29802.

Peter Ekechukwa, M.S. 1983, earned his Ph.D. at the U of Texas at El Paso, after leaving UMD. His wife, Angela, who is a nurse, earned her degree while they were in El Paso. Their son, Obinna Curtis is four years old now, and a daughter, Nneka Antionette, was born in March 1991. The family is now living in South Carolina where Peter is teaching biology at the University of South Carolina at Conway. Address: 1025 Carolina Road, Unit Z-1, Conway, SC 29526.

WE WOULD BE DELIGHTED TO HEAR FROM YOU and in particular ask you to let us know of:

News of yourself _____

Name _____ Degree and year (if applicable) _____

Address _____

Information or addresses of other friends or alumni who would like to receive newsletters _____

Send the above information to the newsletter editor at the department address on the mailer.

Alumni and friends who wish to contribute to the Hargis lecture series or to undesignated support of the department are urged to do so. Such contributions may be sent to the UMD Biology Department.

Alumni Notes

Debra Favre, B.S. 1991, graduated at the end of winter quarter and worked during the spring for the Nature Conservancy on a prescribed burn. During the summer she participated in a Gypsy Moth survey in the Minnesota metro area for the U.S.D.A. She is looking for a permanent job, preferably in field work. Address: 5152 Valley View Rd., Minnetonka, MN 55345.

Brian Sullivan, B.S. 1985, recently accepted a waterfowl biologist position with the Missouri Dept. of Conservation. Address: Mo. Dept. Conservation, 1110 S. College Ave., Columbia, MO 65201.

Edward T. Bersu, B.S., 1968, was the recipient of one of the 1990 University of Wisconsin-Madison Distinguished Teaching Awards, which are presented each year to eight faculty members. Bersu received his Ph.D. degree in anatomy at the UW-Madison in 1976. He writes that the faculty in the UMD biology department made a lasting impression on him, and that they deserve much of the credit for his award. For almost 15 years, Bersu has served as course director and sole instructor of Human Gross Anatomy, a requirement for students in occupational and physical therapy. In addition, he assumes responsibility for three other courses in clinical anatomy and gross human anatomy through the UW Medical School. In 1987, Bersu won the McBurney Faculty Awareness Award for exemplary efforts to accommodate and promote awareness of the special needs of persons with disabilities. (Reprinted from UMD Bridge)

Kelly Jewett, B.S. 1984, MD 1991, spent three months

in the summer of 1991 in Monrovia, Liberia, as part of a Church World Service emergency medical term. She was involved in treating people suffering from malnutrition, tuberculosis, malaria, and other parasites, as well as treating those who had suffered loss of limbs, other wounds and emotional and psychological stress in the civil war which has gone on more than two years. At least fifty thousand have died and half the population has been displaced from homes and communities. Kelly hopes to go back to Liberia in the future.

David Lurye, B.A. 1980, D.D.S. 1985, a dentist in private practice in Colorado, wrote to say he always enjoys the news letter and has lots of good memories of UMD. In addition to his practice in Winter Park, CO, he has added a second in Grandby. He describes his life as work, work, work, and then play, play, play! Address: Water Board Bldg., P.O. Box 314, Winter Park, CO 80482.

Brent Haglund, B.A. 1971, who presented a 1987 seminar at UMD regarding his work as executive director of the Wisconsin Chapter of the Nature Conservancy, has since become the first full time president of the Sand County Foundation in Madison, where he is helping to continue the work of Aldo Leopold, the first professor of wildlife management at the UW Madison. The foundation is involved in education programs and research in conservation.

Terry Lee Gokee, B.S. 1989, is working with the National Forest Service at Rocky Mountain Experiment Station, on the geographic information system (GIS). Address: 110 Redstone Lane, Bellvue, CO 80512.

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