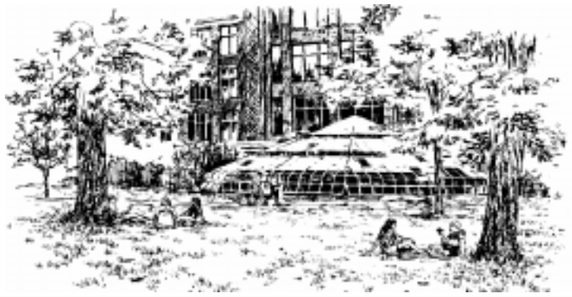
Department of Biology

Gnat's Eye Gnus

Alumni Newsletter
1998



Chair's Corner

A message from Julian Adams

Although a year has elapsed since I wrote to you, it seems like only yesterday. So much has happened in Biology over that last year - and all of it good - that I feel I scarcely had time to take a breath.

At the faculty level, we had an outstanding recruiting year. Drs. Jesse Hay and Jianming Li joined the Department this fall, along with Dr. Ken Cadigan, who was recruited a year earlier. Thumbnail sketches of their research interests appear on pages 2, 3 and 4. Dr. James Bardwell, who joined the faculty in January a couple of years ago, was awarded a Pew Fellowship. This is a highly prestigious and competitive award in the biomedical sciences, and Jim is the first faculty member at the UM to have received such an honor in the last eight years. I should not forget our senior faculty - who continue to win accolades from students and their peers alike. This year two faculty, Steve Easter and Charlie Yocum, were awarded Collegiate Professorships, the highest honor the College of L.S.&A. can bestow on faculty. This year also, three of our senior faculty retired from active duty at the University of Michigan, Sally Allen, Carl Gans and Peter Kaufman. Together, they had 108 years of service at the University of Michigan! Carl has moved to Austin, where he was given an adjunct professor position at the University of Texas-Austin, but Sally and Peter are still active, are seen almost every day in the building. Happily we continue to reap the benefits of their fellowship.

I am also happy to report that this year we have one of the best entering classes of graduate students in recent years. Forty two Masters and Doctoral students from all over the country, Europe and Asia, have joined our graduate student community this year. Several of our continuing graduate students received prestigious honors. Katherine Suding and Jihong Wang were awarded Rackham predoctoral fellowships, during a year when competition was particularly stiff, and Chris Baraloto and Chris O'Neal were selected by the Graduate School as outstanding Graduate Student Instructors.

Big changes are under way in our teaching of Introductory Biology this year. Our undergraduate curriculum in Biology is presently founded on a two-semester sequence which has remained essentially unchanged for 15 years or so. About 18 months ago, nagging worries about our introductory biology curriculum prompted us to initiate a wide reaching analysis. As a result of the hard work of a dedicated group of faculty and students, major changes are planned. The first phase of the changes will be inaugurated this coming January, when we will teach for the first time, the new one-semester course in introductory biology, Biology 162. In the coming academic year we will introduce a new suite of courses at the 200-level, which will be logical successors to our new foundation course. We are all enthusiastic (the faculty voted unanimously to enact the changes!) about these new development in our undergraduate curriculum; our curriculum is now at the "cutting edge" for the new millenium. (Further details of these changes can be found on page 5).

I end this letter on a more somber note. Early in September, Prof. Erich Steiner passed away at his home after a lengthy illness (see the obituary on page 6). As many of you already know, Prof. Steiner had a long and

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Faculty Highlights

Departmental notes and news

Julian Adams was elected a Senior Fellow in the Michigan Society of Fellows.

Richard Alexander was invited to give the keynote address at the Orthopterists Society meeting in Queensland, Australia.

Jim Bardwell was elected a Pew Scholar. This is a highly competitive national program which recognizes the top cellular/molecular biologists in the country. He was a Convener and Speaker at the Protein Folding Session ASM General Meeting in Miami. Jim received a new NIH grant for his project "Functional Analysis of a Protein Folding Catalyst."

Rolf Bodmer carried out research at the Institute of Molecular Development (IBDM) in Marseille, France during his sabbatical. He was Chair and Speaker of the Session "Molecular Mechanisms of Cellular Autonomy" at the meeting of the French Society for Cell Biology in Marseilles. Rolf also received two new grants, one from NIH for his project "Genetic Control of Cardiac Cell-Types and Lineages," and one from the American Heart Association for his proposal "Genetic Mechanisms of Specifying Cardiac Competence and Differentiation."

Wesley Brown received new funding for two years from NSF for his proposal, "A phylogeny of major metazoan radiations."

Lisa Curran served on President Clinton's State Department Delegation to Asia before the Kyoto Climate Change Meetings. Lisa received two new grants this year: one from the Nature Conservatory and Programme for Belize entitled "Rio Bravo Carbon Sequestration Pilot Project: A Case Study in Implementation," and one from the Center for Clean Air Policy for "Global Climate Change Policy in Central and Eastern Europe: An Institutional Analysis."

Robert Denver received three new grants; from NIH for "Thyroid Hormone Action in Brain Development," from NSF for "Molecular Basis of Thyroid Hormone Action in Brain Development," and from the American Thyroid Association for "Physiopathology of Brain Dysfunctions in Congenital Hypothyroidism." Bob also received an LS&A Excellence in Research Award.

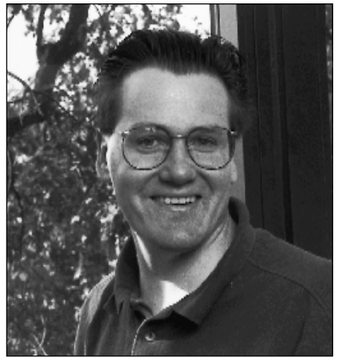
Cunming Duan was the chair of a session at the Society for Integrative and Comparative Biology Annual Meeting. Cunming received two new grants, one from NSF for "Molecular Mechanism of IGF Action in Fish Growth: Role of IGFBP-3," and one from NIH via the Michigan Diabetes Research and Training Center for his proposal "Structural and Functional Analysis of Insuline-like Growth Facot Binding Protein-3."

Steve Easter carried out research at the University of Murcia, Spain, the Ecole Normale in Paris, France, and the University of Western Australia in Perth during his sabbatical. He received fellowships and support in all these countries. He also received the Margaret and Herman Sokol Faculty Award in the Sciences *(see page 6)*.

Ron Ellis received grants from the American Cancer Society for "The regulation of Germ Cell Fate in *Caenorhabditis elegans*" and from the March of Dimes for "Does repression of *fog-3* by TRA-1A control sex-determination in germ cells?"

William Fink consulted with educators, law enforcement officials, and television and radio producers on piranha biology used in a Discovery Channel special on piranhas and a National Geographic Explorer show on captive piranhas.

Robert Fogel's Herbarium web site (http://www.herb.lsa.umich.edu/) has won numerous awards including: The Learning Kingdom World Wide Web Site of the Day, Digital Dozen selection of World Wide Web sites for August by the Eisenhower National Clearinghouse for math and science educators, New Scientist's Plant Science World Wide Web Site of the Day, Editor's Choice Bonus.com World Wide Web Supersite for Kids, and the University of Michigan's Research Web Site of the Week.



New Faculty - Ken Cadigan

Dr. Ken Cadigan comes to us from Stanford University, where he was a postdoctoral fellow. He also held a postdoctoral position at Basel, Switzerland, after receiving his Ph.D. degree from Dartmouth University in 1989. Dr. Cadigan is interested in how cell-cell signaling in growing embryos occurs, and is focusing on a particular signaling protein in the fruit fly, *Drosophila*. This single protein is responsible for specifying the ultimate fates of many cells, e.g. heart cells and brain neurons. His experimental approach takes advantage of the powerful genetics, and extensive physiological and biochemical information available for *Drosophila*. Dr. Cadigan will be teaching courses in both cell and developmental biology.

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Deborah Goldberg continues as EEOB group leader and was promoted to Professor.

Rich Hume completed a term as Associate Chair for Curriculum for the department. He is the new director of the University's Neuroscience Program.

Santha Jeyabalan received the University of Michigan Ruth M. Sinclair Memorial Award for undergraduate counseling.

George Kling was elected as a Fellow of the American Association for the Advancement of Science (AAAS). He also received a five-year award from MBL/NSF for a project, "Arctic Long Term Ecological Research."

John Kuwada received two new grants; from NIH for "Role of netrins and semaphorins in axonal guidance," and from the Muscular Dystrophy Association for "Molecular analysis of outgrowth and sprouting by motor axons."

Janine Maddock was the Session Chair at the Gordon Conference on Signal Transduction in Microorganisms. She received NSF funding for three years for her project "Functional characterization of a Caulobacter GTPase effector domain," and a four-year award from NIH for her project "Biochemical and genetic analysis of cgtA in Caulobacter."

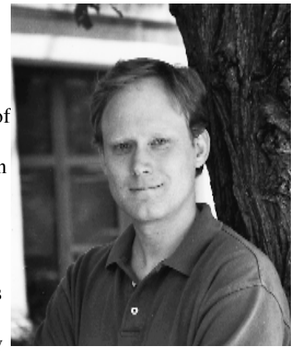
Michael Martin served as the Interim Director of the Honors Program and also chaired the committee that reviewed the introductory biology curriculum. He received a new grant from NSF for his project entitled "The Gut as Arbiter of Oxidative Stress in Insect Herbivores."

David Mindell was off campus during April, May and June 1998 as Visiting Professor at The Institute of Statistical Mathematics, Interdisciplinary Studies Department, of the Japanese Ministry of Science in Tokyo. David received two new grants this year: one from NSF for "Avian ordinal phylogeny based on mitochondrial DNA sequences" and the other from the Peregrine Foundation for "Genetic diversity and systematics of Harpy Eagles."

Thomas Moore received a grant from DARPA/DNR for his project "Computational Neuromechanics: Programming Work in Biological Systems."

Phil Myers' Animal Diversity Web site contains several thousand pages of information on the natural history of animals and the structure of mammals. It is visited by over 2000 people a day. Phil won a nomination for ComputerWorld Smithsonian award for innovative use of technology in education.

New Faculty - Jesse C. Hay



Dr. Jesse Hay joins us after a postdoctoral fellowship at Stanford University. He received his Ph.D. degree from the University of Wisconsin-Madison in 1994. Dr. Hay's research concerns intracellular trafficking, or in other words, "how things get to their proper place within cells". The life and function of cells depends upon individual compartments that carry out specialized tasks. To carry out its particular function, each compartment has to have its own special mixture of cellular products such as proteins and lipids. Dr. Hay studies the process by which newly synthesized cellular products, packaged in containers called vesicles, are delivered to their appropriate destination compartment—a process which involves special proteins called "SNAREs" that function as intracellular traffic cops. He will be teaching an undergraduate course in cellular biology, and a graduate course specializing in intracellular trafficking.

Barry OConnor was recently elected Chair of the Systematics, Morphology and Evolution, Entomological Society of America. He also received a grant from NSF to modernize the facilities for the ectoparasite collections of the University of Michigan Museum of Zoology.

Diarmaid Ó Foighil serves as the Associate Editor of the *Malacological Review*. He also held a symposium seminar (Refining Molluscan Characters) at the World Congress of Malacology meeting in Washington, D.C.

Laura Olsen was recently named Chair of the Midwest Society of Plant Physiologists. She received a new grant from USDA this year for "Signals, Chaperones, and Receptors Required for Peroxisomal Protein Transport."

Eran Pichersky was promoted to Professor this year. He continues his role as Associate Chair for Research and Facilities. Eran also received a USDA grant this year for his project "Biotechnology of Flavor Improvement."

John Schiefelbein completed his term as the MCDB group leader and became Associate Chair for Curriculum. He received two new grants this year: from NSF for "Molecular Genetics of Cell Fate Specification in *Arabidopsis*" and from USDA for "Molecular Genetics of Root Hair Initiation in *Arabidopsis*."

Mark Siddall, a Michigan Society Fellow and an Assistant Professor of Biology, was awarded the 1998 Sokol Postdoctoral Award from the University of Michigan.

James Teeri was re-appointed as Director of the Matthaei Botanical Gardens and continues as the Director of the Biological Station in Pellston. He received a grant from the Department of Energy for "Mass and Energy Exchange in a Northern Hardwoods Ecosystem."

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Kathryn Tosney was the Chair of a Plenary Session titled "Pattern Formation in Development and Evolution" at the 13th International Congress of Developmental Biology in Salt Lake City. She was also the Organizer of the Education Session for the Society for Developmental Biology in Stanford, California.

W.H. (Herb) and Florence Wagner continued their research and travels, and celebrated their 50th wedding anniversary in August.

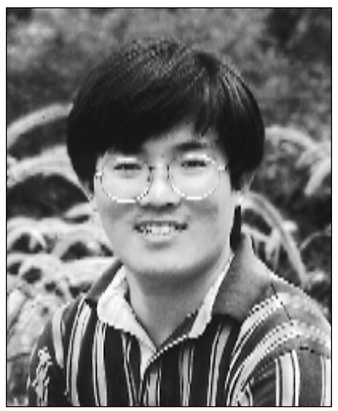
Paul Webb was an invited speaker at the Tenth International Symposium on Unmanned Untethered Submersible Technology at the University of New Hampshire.

Earl Werner was on sabbatical this year. He was an Invited Instructor for the Animal Behavior Graduate Group Workshop at the University of California, Davis. Earl also received a new grant from NSF for his proposal "A Long Term Study of an Amphibian Assemblage at the Landscape Scale."

Mark Wilson gave numerous presentations this year including talks in Martinique, Washington D.C., Chicago, Boston, and Bordeaux, France. He received two new grants: one from NIH for "Training Medical School Faculty to Tackle Malaria in Malawi," and one from the CDC for "Use of Partner Histories to focus HIV and STD Prevention."

Michael Wynne was awarded the "Distinguished Lecturer" at the 37th annual meeting of the Northeast Algal Society in Plymouth, Massachusetts. He also served as the Chairman of the Nominations Committee for the International Phycological Society.

Charles Yocum is the new MCDB group Leader. He received a new grant from NSF for his project "Site-directed mutagenesis of a photosystem II extrinsic protein."



New Faculty - Jianming Li

Dr. Jianming Li joins the Biology Faculty after completing a three-year postdoctoral position at the Salk Institute. He received his Ph.D. in 1995 from the University of Virginia. He studies "brassinosteroids" - a unique class of plant hormones that are essential for normal plant development. This class of molecules is very similar to steroids - well known to be crucial for human development and health. His research will use a combination of biochemical, genetic and molecular biological approaches to analyze the mechanism of action of these plant hormones in Arabidopsis - the *"Drosophila"* of plant biology. He will be teaching cellular and molecular biology.

Biology on the Web

The World Wide Web is becoming an increasingly important means of conveying information, and is being used more and more as a teaching tool. Staff in Biology at Michigan have been working diligently all summer to redesign the Biology Web Page. We hope to have our "new look" up and running this academic year. Please check us out at www.biology.Isa.umich.edu.

Biology Faculty have also been spending time creating Web resources for their classes and their research. In the summer of 1997, **Phil Myers** worked on a system for using the WWW to make materials from the collection of the Museum of Zoology available to students taking Biology 451. He has also developed materials for Biology 108, which has been included in his Animal Diversity Web page. You can find this Web site at http:/www.oit.itd.umich.edu:80/bio108/. The website was nominated for a prestigious Computer World-Smithsonian Award for innovative use of technology in education. It has also been incorporated into an archive maintained by the Smithsonian to document the growth of technology in education.

Bob Fogel has designed and maintained a website, Fun Facts about Fungi, and has received numerous accolades for his efforts. The website has been named The Learning Kingdom WWW Site of the Day, Editors Choice, Bonus,com WWW Supersite for Kids, and the University of Michigan research Web Site of the Week, among others. Check it out at http://www.herb.lsa.umich.edu/Kidpage/factindx2.htm.

The Regents of
The University of Michigan
Laurence B. Deitch, Daniel D. Horning, Olivia P. Maynard, Shirley M. McFee, Rebecca McGowan, Andrea Fischer Newman, Philip H. Power, S. Martin
Taylor, Lee C. Bollinger (ex officio).

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Major Revisions in Introductory Biology Planned

Over the last year and a half a small group of faculty, lecturers and graduate students has been working diligently to critically examine our introductory biology offerings and to suggest changes. The result of their efforts will be sweeping changes in the way in which we teach biology during the first two years, as well as what we teach. Starting in Winter 1999, the current two-term Introductory Biology sequence of Bio 152 & Bio 154 will be replaced by a single new course, Bio 162. An expanded and extensively revised palette of courses at the sophomore (200) level will round out this change.

First and foremost, the committee set itself the task of deciding on goals for the introductory sequence and determining how well our current courses were meeting those objectives The committee also wanted to identify the shortcomings of the present introductory biology courses.

The committee established the following aims for our Introductory sequence: i) to serve as a transition from high school biology to college biology for a heterogeneous student population; ii) to stimulate and sustain student interest in biology; iii) to introduce students to content that is essential background for higher-level courses; iv) to introduce students to key concepts in biology; and v) to illustrate the process by which the field of biology progresses.

Based on these aims, the committee used a variety of sources to evaluate the success of Biology 152/154. Course evaluations from previous years identified broad areas of student dissatisfaction and helped shape a questionnaire distributed to students in our middle- and upper-level biology courses (those who could tell us how well the introductory courses had prepared them for higher work). Focus groups, conducted separately with undergraduate students, graduate student instructors and faculty, allowed some of these issues to be explored at greater length, and offered differing perspectives.

The results showed that Bio 152/154 was best described as a mediocre experience. While not a disaster, it fell far short of our intentions and the students' expectations. The main complaints were about the impersonal nature of the class, the number and choice of topics, multiple-choice exams that seem to reward memorization over understanding, and the lack of integration between lecture and lab.

A number of options were presented to the faculty, who quickly and decisively settled on the one-term model. The new course, Bio 162, will add a discussion section to three hours of lecture and three hours of lab each week. The discussion section will be critical, tying together lecture and lab, and letting students explore lecture concepts from a different angle. The discussion is designed to encourage students into taking a more active role in the learning process, rather than passively recording facts thrown out in lecture. The same instructor will lead lab and discussion for a group of twenty students, meeting with them twice a week. This should foster greater continuity for the students and allow the instructors to assign more in-depth work. The restructuring of workloads should also permit greater use of short-answer questions on exams.

The syllabus for the new course will include both Cellular and Molecular Biology as well as Ecology and Evolutionary Biology. It will only superficially resemble the current Bio 152 lecture sequence. Thus, students will be able to match their coursework to their interests, and the department will get students into its upper level courses more quickly.

Curiously, few other Biology departments follow the one-term model. Of 17 institutions surveyed, only two (Duke and Harvey Mudd) take a similar approach. In fact, Duke just switched from a two-term sequence in 1997, so that makes UM one of the leaders in this trend!

Dr. Ammerlaan and Prof. Martin are scheduled as the instructors for the inaugural term. "After two years of planning, it'll feel good to actually get this course running," says Dr. Ammerlaan. Prof. John Schiefelbein is also committed to rotate into the course. The dedication of fewer faculty into a longer rotation in the course should provide a greater sense of "ownership" and make it easier to improve the course from term to term. After a first run-through in Winter 1999, the plan is to have one person teach the whole course. From student comments, this may be the most appreciated change.

Prof. Martin has already written three new labs for Bio 162, and is anxious to integrate more investigative software into the course. The biggest remaining job is to plan out the discussion activities for each week. A number of senior graduate students have contributed their ideas—Lindsay Whitlow, a third-year graduate student, will work this Fall to write-up discussion activities. "We're expecting the graduate students to carry a big part of the new course, and I'm grateful for their commitment to its success," says Dr. Ammerlaan. "The new discussion should help tremendously, because it will let students find out if they really understand a topic before they get to the exam. It will give them a chance to assimilate all the information presented in lecture and lab. Under the old system, the exam was the students' first and last chance to engage in any sort of 'biological dialogue'. No wonder they felt the course was impersonal."

Over the next year the department will introduce a selection of new and modified courses that will be natural sequels to the new introductory course. New courses in animal physiology, embryology, animal diversity and plant diversity will be implemented over the next two years. Says Professor Rich Hume, the outgoing Associate Chair for Curriculum, "Our students will now be able to make meaningful choices of disciplines within biology to study, even before taking the core junior-level courses in genetics and biochemistry. This should significantly enrich their undergraduate experience."

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Erich E. Steiner
1919-1998

Erich Ernst Steiner, Professor Emeritus of Biology died August 28, at his home. He was born on April 9, 1919 in Thun Switzerland. His family immigrated to the U.S. in 1922 and Erich was raised in a suburb of Washington, D.C. In 1944 he married Dorothy White of Roanoke, VA. During World War II he served initially in the Army Signal Corps and later in the Medical Service Corps. He was discharged as a 2nd Lieutenant in 1946. Following his military service he was employed for aperiod as a vocational counselor for the Veterans Administration before resuming an academic career.

Professor Steiner received his baccalaureate degree in Botany from the University of Michigan in 1940, and his Ph.D. in Genetics from Indiana University in 1950. Following completion of his doctoral work, he accepted a position on the faculty of the Department of Botany at the University of Michigan. During his tenure at Michigan he served as Departmental Chairman (1968-1971), as Director of the Matthaei Botanical Gardens (1971-77, 1989-91), as a member of the Editorial Board of the U of M Press, and on numerous academic committees.

He was an active and respected teacher who introduced one of the first audio-tutorial teaching laboratories in botany. As a researcher, he was recognized internationally for his work on the evolutionary genetics of *Oenothera* (Evening Primrose). He was invited and served as a guest professor at the University of Cologne, Germany (1960-61), the University of California at Davis (1967) and the University of Dusseldorf, Germany (1982, 1984). Dr. Steiner was a member of Phi Beta Kappa, Phi Kappa Phi, Sigma Xi and numerous other professional societies (Botanical Society of America, Genetics Society of America, American Society of Naturalists, Society for the Study of Evolution, Economic Botany Society, American Association of Botanical Gardens and Arboreta, American Horticultural Society, American Institute of Biological Science, Michigan Botanical Club, and Torrey Botanical Club). He served as Secretary of the Michigan Academy of Science, chair of the teaching section of the Botanical Society of America, member of the Board of Directors of the Michigan Botanical Club, member of the Editorial Board of the Plant Society Bulletin, founding member of the Friends of the Nichols Arboretum, and as a consultant and examiner to the AIBS Office of Biology Education and the GRE Advanced Biology Test respectively.

Professor Steiner had a continuing interest in the development and utilization of botanical gardens and arboreta for teaching, research and public outreach. He served on the Board of Directors of the American Association of Botanical Gardens and Arboreta. His avid interest in horticulture and the Matthaei Botanical Gardens continued throughout his retirement.

Professor Steiner is survived by his wife, Dottie, his three sons and their wives, and seven grandchildren.

Charles F. Yocum and Stephen S. Easter Honored

This last year two of our faculty were honored with two of the most prestigious awards the University has to offer. Professor Charles F. Yocum and Professor Stephen S. Easter were awarded LS&A Collegiate Professorships, and Professor Easter was named the 1998 recipient of the Margaret and Herman Sokol Faculty Award in the Sciences.

Collegiate Professorships in LS&A were established in the early 1990's, and have been awarded to 19 professors since their inception. When there is an opening for a Collegiate Professorship, departments are asked to submit nominations of faculty who have achieved high stature in their field of research, provide excellent mentoring to undergraduate and graduate students, excel in teaching, and provide exemplary service to their departments, the College, and the University. Departments tender a one-page nominating letter, along with the nominee's curriculum vitae. The LS&A Executive Committee reviews the preliminary nomination, and narrows the pool of candidates to five or six. The departments are then asked to create a full document, including documentation of teaching excellence and letters from external referees and former students.

Collegiate Professorship awards include a yearly salary stipend, and $5,000 a year for five years in discretionary funds for research. Collegiate Professors are asked to choose a former member of the College to name their professorship after. They are also invited to present a lecture acknowledging receipt of this honor.

Nominations for the Sokol Faculty Award are solicited by and submit

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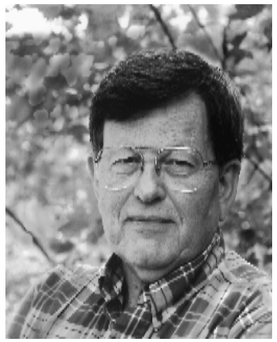
ted to the Horace H. Rackham Graduate School. It is also a competitive process, and the award is presented to the nominee who best exemplifies mentoring of graduate students and maintains high standards in graduate education. The Margaret and Herman Sokol Faculty Award in the Sciences provides a $25,000 award for discretionary use.

PROFILE - CHARLES F. YOCUM

The Collegiate Professorship is the latest in a list of honors Professor Yocum has received since he joined the faculty at Michigan in 1973. He has received the Henry Russel Award, a Fulbright Fellowship, and a University of Michigan Distinguished Faculty Achievement Award.

When Professor Yocum joined the faculty in the Department of Botany, Division of Biological Sciences, his research focused on ATP Synthase, a cellular enzyme complex that can both generate or consume ATP molecules, the "energy-carriers" of the cell. Since the process of photosynthesis also generates ATP molecules by capturing radiant energy from the sun, he became interested in the components of the photosynthetic apparatus that used this energy to convert water into oxygen. However, he was unable to garner support or funding for this interest. Senior plant biologists said the work he proposed to do couldn't be done. He persevered and formed a collaboration with Professor G.T. Babcock at Michigan State University, and refined a method for isolation of the enzyme system, called Photosystem II, that produces oxygen in the atmosphere. An undergraduate, Deborah Berthold participated in the experiments which led to what has been called "one of the three most cited papers on photosynthesis." The article, which developed the methodology for the isolation of "water-splitting" photosystem II preparations from plants, is known in the field by the initials of the authors - the "BBY paper."

Professor Yocum's preparation has been a vehicle to many important discoveries in the field of photosynthetic water oxidation. He and his collaborators have discovered why calcium and chloride are necessary for this reaction to occur, and have produced a substantial body of data on the structure and function of photosystem II. Although his work is predominantly in the area of biochemistry, many of his former graduate and undergraduate students have become molecular biologists. Professor Yocum says "This is indicative of how broad this resesarch area is, how it has evolved over the last 25 years, and how many different types of techniques and methods are necessary to conduct the research in my laboratory."



Charles F. Yocum

One of the more exciting recent developments in the Yocum laboratory is the discovery that a protein in Photosystem II that exhibits physical properties that are very similar to a protein found in Alzheimer's patients. He says, "although it is unlikely to lead to Medical School faculty to turn to plants as a model to study Alzheimer's, it is an exciting discovery for people who are interested in basic aspects of protein structure."

Professor Yocum has devoted a large part of his teaching obligations to introductory courses in both Biology and Chemistry. He sees the challenge in teaching introductory courses as one of getting students interested in sciences, and considers this to be important because the current material covered in such courses is the foundation of where 21st century science is heading. He says, "I am always looking for the best ways to present material in a clear and enthusiastic way, to explain why science is important, and to get students excited about the many possibilities in science." He feels it is important for the best researchers to devote time to teaching introductory courses.

Professor Yocum routinely excels in his teaching efforts, as evidenced by consistent high evaluations from students, the number of students who request his time advice and support, and letters of support solicited by the Department for various nominations. His supporters say he devotes unlimited amounts of energy to his teaching and mentoring. He says that "if the undergraduate experience is of high quality, then many students have a better opportunity to start their career on the right track." Humor is said to be an essential ingredient in Professor Yocum's success as a teacher and a mentor, and he puts a lot of energy into keeping humor in a situation.

Professor Yocum is equally dedicated to training graduate students. His support letters speak to his patience in the lab, his willingness to take the time to spend with laboratory personnel, and his contagious enthusiasm for ongoing projects in his laboratory. His former undergraduate, graduate students and postdocs have gone on to their own productive careers in academia and business. Professor Yocum says "there have been a number of students in my lab who went on to obtain an MD degree, something that some people would consider strange after doing research in plant biochemistry. I try to ensure that all students receive the proper training and mental outlook so they can do basic research in any field." He feels that with the right type of experience and proper attitude his students are prepared to advance in their careers, no matter what path they choose.

Professor Yocum was Chair of the Department from 1985-1991. He has

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served on numerous department and College and University committees. He has become a valuable mentor to junior faculty. He says the rewards of service is seeing the results of his time investment reflected in the success of students and junior faculty, and in the national rankings of the Department. He says "it is difficult to balance research, teaching, and service, but it is important to devote your best effort to each area to ensure quality education and productive and meaningful research."

Retirement is still some way off in the future for Charlie Yocum. He says "Research is still fun, teaching is still fun, and I still have many ideas for future research projects. Junior faculty play an important role in my attitude. They keep bringing in new ideas and come to me for conversation, advice and collaboration. I feel fortunate to be working on a research problem that constantly surprises me and demands a constant input of new ideas. I am also lucky to still have the intuition for finding new directions for my research."

When he received the telephone call from Dean Goldenberg informing him of his selection as a Collegiate Professor, he was very surprised. "I am honored to receive this acknowledgment for my efforts. I know it is always difficult to choose a recipient for an honor such as this, and I am grateful to the Department and my letter writers for their efforts."

Professor Yocum chose to name his Collegiate Professorship after Alfred S. Sussman. He says this was the only choice for him. "Professor Sussman was the faculty member who, scientifically, was the closest to my work when I joined the faculty. Professor Sussman was conducting research on metabolic biochemistry, so I could easily talk to him about his research. Mentoring junior faculty was important to Professor Sussman, as it is to me. It was a natural choice for me to choose to honor him in this way."

Professor Yocum will present his Collegiate Professorship Lecture March 22, 1999 in the Rackham Amphitheatre.

PROFILE - STEPHEN S. EASTER

The Collegiate Professorship and the Sokol Award are the latest in a series of awards that Professor Easter has received. Most recently, in 1994, he received the University's Distinguished Faculty Achievement Award. This past winter he returned from a year-long sabbatical during which he spent time in France, Spain and Australia. He was the recipient of two competitive professorships, and a distinguished visitor's award from his host institutions (see Faculty Highlights).

Prior to coming to Michigan in 1970, Professor Easter had studied almost no "biology," have been trained as a biophysicist at both the undergraduate and graduate levels. Professor Easter says he has been a neurobiologist throughout his career, however there "wasn't a term for it" when he began his research.

Stephen S. Easter

Professor Easter says "My introduction to biology came when I was in Medical School at Harvard University, where I first encountered the nervous system. This was a time (1961) when information about neural phenomena was exploding, and I was immediately hooked. I talked with two of my professors (who later shared the Nobel Prize) about leaving to enter graduate school, and they thought it made sense. They recommended Johns Hopkins, and I went there. I quickly developed an interest in the visual system and have been working on it off and on ever since. Initially, I studied function, how the retina codes and processes light, but over the years I turned to developmental problems, particularly how the retina makes connections with the brain. I am now a developmental neurobiologist, although I never took a course in embryology. This changing fields during one's career is not unusual these days. Most of us find that our current research often bears little resemblance to the work that we began with as graduate students.

Many of Professor Easter's former students and postdoctoral associates credit him with their success. They say he was demanding yet patient, and encouraged independent thinking and high quality research. Many have remarked on Professor Easter's willingness to train students who were not working on a project directly related to his own research. Professor Easter says, "I endeavor to have everyone in my laboratory leave with a single-authored paper. I want to train people to become independent thinkers, and to survive and in advance in their field." He feels it can be counter-productive to have laboratory personnel who work on the same project. However, he says his desire to have different types of projects ongoing in his lab is not entirely altruistic. He says "Students and postdocs exploring different projects in my lab have allowed me to expand my knowledge, they bring new techniques and methods into my lab."

Professor Easter says he tries to make his laboratory a community, to encourage his personnel to become colleagues, to challenge each other, and to enrich each other's experiences. All indications from former students and postdocs are that Professor Easter is most successful in this endeavor. Professor Easter's former students and laboratory associates think so highly of him that they gather together one evening every year during the Society for Neuroscience meeting for a dinner. The former Easter Laboratory progeny spend the evening reminiscing, and talking about current research projects.

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As for teaching, Professor Easter prefers to teach courses for Biology majors (rather than courses intended for social science and humanities majors), and to get students actively engaged in learning as opposed to the "sponge" method. He says that we should focus on teaching how to reach conclusions as well as what the conclusions are. He believes in the importance of writing assignments, and includes them in even the lower level courses he teaches. Professor Easter has taught Introductory Biology, Neurobiology, and Physiology. He says "I have tried to teach all of my courses with enthusiasm, and endeavor to generate interest and enthusiasm in the students."

Although internal and external colleagues and former students credit Professor Easter for playing a key role in the success of the Neuroscience Program at Michigan, he personally feels his role was a small one. He was Director of the program for four years, and says it began to flourish because of consistent and material support from the University.

Professor Easter has served the Department on numerous standing and ad hoc committees. He served as Chair of the Department of Zoology in the Division of Biological Sciences, and as Associate Chair for Curriculum in the Department of Biology. He has served on many faculty search committees, and has been instrumental in hiring and mentoring promising junior faculty. Professor Easter believes serving on search committees is an important duty for senior faculty, and that it is important to ensure continuing quality and breadth of science within the Department.

Professor Easter plans to continue in his present area of research. He says "I like what I do." He benefits immensely from the University's sabbatical program. He believes it is important for faculty to take advantage of the sabbatical program, "to take the time to stay current in their field of research, and to spend time dedicating oneself to their research. The demands on faculty members to teach, produce research, and serve is very heavy, and they must learn to balance the demands on their time."

Professor Easter chose the name for his Collegiate Professorship after Mathew Alpern because he was a primary factor in Professor Easter's decision to come to Michigan. He says, "Professor Alpern was an eminent scientist working on the visual system, and was the person I had the most intellectual scientific interactions with during my first fifteen years at Michigan. Professor Alpern was tough, critical and at times irascible, but he was at least as hard on himself as he was on others. He inspired and influenced me to hold high standards for myself and others with whom I work."

Professor Easter will present only one lecture for both awards (November 2, 4:10 p.m., in Rackham Amphitheatre), and he plans to focus on his current research. He intends for the lecture to be comprehensible to lay-people.

Professor Easter presented one lecture for both the Sokol Faculty Award and the Collegiate Professorship on November 2nd.

Biology Faculty in the News

Local and national press often contact UM Biology faculty for comments in their area of expertise, and to profile their research. Here are tidbits of what publications are contacting our faculty.

The Seattle Times, New Scientist, GEO, the Daily News of Midland, Michigan, the *Times Herald* of Port Huron, Michigan, *The Detroit News,* the *Ann Arbor News, Science News*, and *Science Scope* all profiled the work of Assistant Professor **Robert J. Denver,** which identified a stress hormone in the Western spade-foot tadpole, corticotropin-releasing hormone, or CRH, which triggers the tadpole's metamorphosis to a toad.

The Houston Chronicle, the *Architectural Record, The New York Times, The Arizona Republic, Geotimes*, and the Features page of the *London Sunday Times* all cited Associate Professor **George Kling's** work on carbon in the atmosphere in the northern tundra.

The Detroit Free Press profiled Professor **James Teeri** last December, in an article that reported on his research on the changing levels of carbon dioxide, and how plants, bugs and animals may grow more slowly in the future as a result of an increase.

The Detroit News, the *Ann Arbor News*, the *Zeeland Record* in Zeeland, Michigan, and *The Oakland Press* in Pontiac, Michigan all cited Associate Professor **Mark Wilson** (Alumni GEG '97, New Faculty, page 4) on the spread of rabies in raccoons in Michigan. Mark was also interviewed for comment in a *Science* article regarding global warming and its possible effect on infectious diseases.

T*he San Francisco Chronicle* cited Professor **Richard Alexander** in an article entitled "Human Nature, Sexuality, and the Funny Bone."

Professor **Wesley Brown** was cited in *Science* for his and former postdoc Gavin Naylor's research on molecular phylogenetic relations among the major groups of vertebrates and their close evolutionary relatives.

Professor **Arnold Kluge** was quoted in a *Detroit News* article about virgin conceptions in snakes.

Assistant Professor **David Mindell** was mentioned in a *Science* article regarding the extinction of ancestral birds.

Associate Professor **Barry OConnor** was cited by the *Gazette News Service* on the early arrival of mosquitoes this past spring.

Those of you in the Ann Arbor area may have seen the *Ann Arbor*

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News article regarding the E.S. George Reserve, where many Biology faculty and students conduct research. Associate Professor **Beverly Rathcke** and Professor **Earl Werner** were interviewed for the article entitled "Walk on the Wild Side: Biologists have plenty of elbow room at UM's George Reserve." Reporters from the *Brighton Argus* and other local newspapers were also on hand to visit the Reserve and speak with researchers. Professor Rathcke was also cited in *The Grand Rapids Press* for her knowledge on white-tailed deer and how they help spread the spotted knapweed. *(See page 12 for an in depth article on Professor Werner's research.)*

The Minneapolis Star Tribune mentioned Professor Emeritus **W.H. (Herb) Wagner** as the recipient of ferns from Minnesota for identification.

We would be happy to furnish alumni with a copy of any of the articles mentioned in this feature. Please contact bio.alum@umich.edu, or call (734) 764-7427. We would also appreciate receipt of any articles from your area that mention or feature Biology faculty.

Plant Molecular Biology Laboratory

In the last two editions of the Off-Campus Edition of the Gnat's Eye Gnus, we told you about the Microbiology Project Lab, and the Neurobiology Project Lab. These courses were made possible from a competitive grant for improving undergraduate education awarded to the Department by of the Howard Hughes Foundation.

During Winter Term 1998, we were able to offer for the first time a third Project Laboratory course, Plant Molecular Biology Lab, Biology 413. Professor Eran Pichersky designed and taught the course with the assistance of graduate student Ms. Jihong Wang. Thirteen students were enrolled. Professor Pichersky says that "the goals of the are course to familiarize students with state-of-the-art molecular biology techniques as they are applied to plants, and to given them extensive laboratory experience."

The class met twice a week from 1:00 - 5:00 p.m. In addition to the eight hours the students were required to spend in the lab for coursework, the laboratory was available to them throughout the rest of the week and the weekend. The pairs of students took turns coming into the lab during off-hours to prepare cultures and monitor experiments in progress. Professor Pichersky made himself available as much as possible, and could usually be found in the Project Lab at the end of most work days.

Each class session began with a half-hour presentation by Professor Pichersky, explaining that day's projects. He says teaching the Project Lab was more interesting for him than a regular lecture class because it was easier for students to understand principles when they carried out the experiments from which the principles were deduced. Students worked in pairs to conduct experiments, which included isolating, cloning and sequencing DNA, isolation of Plant RNA, and localization of plant genes by such techniques as "southern" blot hybridization.

Professor Pichersky feels the purpose of the course is to get students interested and excited about conducting basic scientific research. He says that book and lecture knowledge is not enough to provide quality science education, that students need to learn techniques, and gain facility with them in order to advance in scientific research careers. He says that although the course is not intended to train students to be laboratory technicians, he believes a number of students would be able to go into industry and become laboratory technicians with the experience they gained in Biology 413. Professor Pichersky estimates that out of the 13 students, two or three have already been accepted to medical school and another three or four have been accepted to graduate programs. He also believes that a few students who had no firm intentions prior to taking this class are now seriously considering graduate school.

The course, which will be offered every winter term, produced positive feedback from the students. One student reported that "the size of the class was ideal for the nature of the course." Another said that the "environment was very conducive to learning." Professor Pichersky's intended purpose of the class was acknowledged by the students, including one who said, "the class taught [me] a wide variety of subjects and gave [me] a general understanding of Molecular Biology techniques."

Professor Pichersky feels Biology 413's first offering was a success. Students appeared to have fully absorbed the information presented and learned more than he could have possibly hoped. A pair of students even identified a new gene in the plant *Arabidopsis thaliana*. The entire class authored a report after they sequenced the gene as part of a class project. The sequence can be found in PubMed in the GeneBank database on the World Wide Web.

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Chair's Corner

Continued from page 1

distinguished career as an evolutionary geneticist. He worked on the evening primrose, Oenothera, known to geneticists as having a fascinating genetic system. As well as being as very distinguished scientist, he was a man of great humanity and compassion. He was admired by everyone in the Department, both as a scientist and as an individual. We all miss him - I particularly so; as Chair of the Botany Department many years ago, he was responsible for hiring me, and bringing me to Ann Arbor.

Fundraising, Gifts and Newsletter Updates

Donations to the Biology Alumni Endowment Fund have increased every year since its inception. This year's total was $13,990, an increase of more than $2,500 over last year's total. The Department is deeply gratified by your continued generosity. We appreciate the gifts you, our alumni, have given over the years and know your participation in our efforts is a key to our continued success. A listing of this year's donors can be found on the page 14. In addition, we would like to express sincere appreciation to those of you who faithfully send your donations and wish to remain anonymous.

All donations, from the smallest to the largest, are greatly appreciated and will be used to support the area of interest designated in your gift response. You may remember that you were asked to contribute to the MCDB graduate student support, and/or to undergraduate research support. Many of you chose to split your contributions, while some chose one area to support over the other. The result of the different distributions was $6,352 to MCDB graduate student support and $7,638 to undergraduate research. When contacted by the University's Telefund campaign, many of you also chose to designate your gift to the Biology Alumni Endowment when contacted by the University, and we are grateful for those contributions as well.

The Department also received larger gifts from individual benefactors this past year. We are extremely grateful for the generosity of Mr. Paul Connell, who has made two generous contributions in memory of his wife, Priscilla, who passed away this past year. The first gift, made shortly after her passing, will be used for fellowships for undergraduates. Funds generated from the account of the second and most recent gift from Mr. Connell are earmarked "for the enrichment of the faculty, graduate students, and undergraduate students in the Department of Biology." Students and faculty who receive funding from this account will receive a Priscilla H. Connell Memorial Award.

A bequest from Elizabeth Youngman, a Biology friend, established an endowment for the "benefit of students studying the areas of plant physiology and molecular biology."

The Department received a generous gift from Dr. Nelda Alger. Funds from her gift were used to establish the Underwood-Alger Scholarship Fund. With the income generated from this account, scholarships will be established for full-time students majoring in the biological sciences in the LS&A. Ninety percent of the income will be used for scholarships for one or more undergraduate students and the remaining amount will be used for scholarships for graduate students.

In each issue of the Alumni Newsletter, we profile the recipients of the Helen Olson Brower Memorial Fellowship. We look forward to bringing you more profiles of faculty and students who will receive awards from these new gifts.

On page 9 you'll see a new feature to your newsletter, Biology Faculty in the News. The University has a clipping service that searches for and sends the department copies of articles in which Biology at Michigan is profiled or mentioned. If you see something mentioning faculty or students in Biology at Michigan, will you please send it to us?

We also feel it is important to maintain contact and receive feedback from our alumni. This newsletter goes out to over 9,000 alumni annually. We would especially like to hear from those who have not returned the Alumni Reply Form in the last few years. We would love to hear about your accomplishments and activities, and to share them with our readers next year. What can we do to make the newsletter more informative, more attractive to you, our audience? What do you want to see more of? Less of? You can return the Reply Form via FAX (734-647-0884), regular mail, or you can e-mail your thoughts to us at bio.alum@umich.edu. We are waiting to hear from you.

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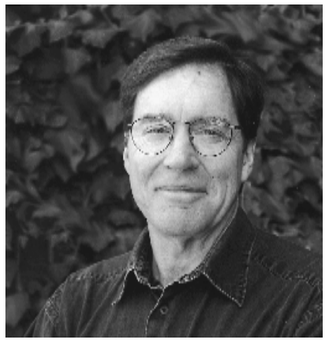
Faculty Research Profile – Earl Werner

Professor Earl E. Werner is one of the Department's senior faculty members in the Ecology, Evolution, and Organismal Biology (EEOB) interest group. He attended undergraduate school at Columbia University, where he received a full scholarship for his studies there. He received his Ph.D. in 1972 in Zoology-Ecology from Michigan State University. After a year as an Assistant Professor of Zoology at the University of Iowa, he returned to MSU as a faculty member for 13 years. He joined the University of Michigan faculty in 1986 as full Professor.



Earl E. Werner

GEG: Why did you choose Biology and academia as a profession?

I have been fascinated with biology since I was a child, though I never entertained the possibility that I could make a living at it until I was in college. After trying geology and the humanities as an undergraduate, I finally settled where I belonged in biology. I did not decide to become an ecologist until taking my first course in ecology in graduate school when I realized that it was ecology that I had always been interested in. Pursuing a career in academia followed naturally, there simply appeared to be no other career that offered the freedom to pursue the research that I had come to enjoy so much.

GEG: How has your research interest changed over the years?

Seemingly mainly by accretion of new interests without losing the old. I began my research career examining the adaptive strategies of food selection in fish and this developed into a study of how these strategies differed among closely related species and what the implications were for coexistence of species in more complex communities. As I examined these interactions, at the time in the local sunfishes, I became intrigued with the question of how the large range in body size within a species population affected these interactions. This question generated an abiding interest in the role of development in ecology and the scaling of ecological phenomena with changes in body size. One important outgrowth of that problem was the discovery of the tradeoff between foraging return and predation risk mediated by body size. We developed some theory along the way to predict habitat shifts in fish as a function of body size which I then discovered laid over onto the question of optimal size at metamorphosis in amphibians. This work ultimately led to a more global hypothesis concerning the origins of complex life cycles in animals, a problem that still engages me. I switched from working on fish to amphibians at that point and added a suite of new interests including phenotypic plasticity in morphological responses of tadpoles to presence of predators, higher-order effects of adaptive responses of species in food webs to other components of the web, and metapopulation phenomena. I guess a general theme that has remained constant is an interest in building up from an understanding of individual biology through species interactions to patterns in ecological communities.

GEG: Geographically, where has your research been focused?

The majority of my work has been based in freshwater systems in Michigan, specifically on fish and amphibian communities. However, I have conducted some work on the community ecology of the cichlid species flock of Lake Malawi, Africa and on the foraging behavior of pomocentrid fishes on the Great Barrier Reef, Australia. I have also done some comparative work on the fish communities of Michigan lakes with those of the Central Highlands of Florida.

GEG: Do you work on freshwater organisms only?

Well, I have for some years now. I am attracted to these systems not only because they hold an inherent fascination for me, but also because of their tractability as a model experimental system. Aquatic systems have relatively defined boundaries and are eminently manipulable. For example, in our work we routinely address questions in community ecology by conducting experiments on a gradient from small laboratory aquaria through wading pools and cattle tanks, pens in natural ponds, and experiments in whole ponds. This capability is important because of the tradeoff between control and reality: as we move toward the laboratory we gain control and can more readily study mechanism, but we lose context. As we move toward the field we lose control but the system better reflects the natural one and we are provided an opportunity to see what has been left out of the explanatory framework. The art form, of course, is to integrate such studies in a way that their advantages mutually strengthen our inferences.

GEG: Do you conduct all of your Michigan studies at the E.S. George Reserve?

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Yes, the great majority of our work is now focused on the George Reserve which is a spectacular facility for ecological research. As I recall well over 350 journal articles and 65 doctoral theses have resulted from work on the area and this research often provides a critical long-term perspective for our current studies. The Reserve is about two square miles and located 30 miles northwest of Ann Arbor. It has been fenced and maintained as a research area by the University since 1930. Thus one can set up experiments, even long-term experiments, without fear of disturbance or vandalism. There are about 50 distinct aquatic habitats on the Reserve from small temporary ponds to large permanent marshes. One of the advantages of the Reserve for our program is that we can study the dynamics of the natural amphibian communities juxtaposed with the experimental capabilities of the research facility that I built with University support when I arrived in 1986. This facility consists of 21 experimental ponds that can be drained and filled individually as well as a 40x60 fully winterized laboratory building.

GEG: Is some of the work you've been doing at the Reserve long-term?

Yes, and the long-term studies are uncovering some very interesting patterns. For example, in 1988 we reinitiated a survey of the amphibians in 37 ponds on the Reserve that had been surveyed in the late 60's and early 70's. Comparisons of these surveys indicated some extraordinarily interesting dynamics on larger spatial and temporal scales than we had addressed before. These data turned out to be so interesting that we applied for, and recently received, funding from a program at NSF for long-term studies in ecology. This funding will enable us to continue the studies in a more formal way and archive the data so that they are available to the broader scientific community. These sorts of data are invaluable in light of questions such as the current concern with global declines in amphibian populations or global climate change, as well as sources of inspiration for our experimental work.

GEG: How have personnel from your laboratory benefited from this survey and the E.S. George Reserve?

The patterns uncovered in the survey have provide many ideas for the studies that have been conducted in my lab. And, as I mentioned the juxtaposition of the experimental capabilities of the pond facility with the study of the natural ponds has a synergistic effect on our research. This permits an integration of lab and field studies that is rarely accomplished. Ideas or phenomena discovered in the laboratory often quickly prompt a study on the field populations and

vice versa. Several former students, in fact, come back to the Reserve annually for the survey and remain involved in that aspect of the work. For example, Dave Skelly who is now at Yale, is an investigator on the long-term grant and comes back for several weeks annually during the survey.

GEG: What is your research focusing on now?

There are several main foci of the work that we are presently conducting. First, we are interested in how we can characterize and predict the adaptive responses of organisms under conflicting demands. For example, we are examining phenotypic plasticity, both behavioral and morphological, in amphibian larvae expressed in relation to the tradeoff between foraging ability and predation risk. Associated with the differences in species responses that we see across the gradient of pond types on the Reserve, we have begun to examine population differentiation in some of these species and how these differences relate to local ecological conditions in the ponds. A second major focus is to understand and again predict the consequences of species interactions to community structure. We are interested in how we can mechanistically characterize species interactions from an understanding of the functional significance of species traits such as behavior and morphology. This interest in part motivates the work on individual responses mentioned above as it is these traits that determine a species performance in interactions with other species and the environment. For example, we have shown that merely caging a predator in the environment can change the per capita competitive effect of an anuran larva on another by 50%, or adding a competitor to a system can alter the per capita predation rates by a predator on the focal species by 35%. In both cases, these higher-order effects are caused by the focal species altering its activity level to balance the gains and risks as predators and resources change in the environment. We are also developing research programs in several new areas. The survey work on the Reserve has prompted an interest in the processes that affect species composition and abundance on larger spatial and temporal scales, that is on scales of many square kilometers and decades. The survey data indicate that amphibian species composition of virtually all of the ponds has changed dramatically since the late 60's, yet most species exhibit the same total number of populations on the Reserve now as then.

GEG: How big is your research group?

Over the last five or six years I have had 6-8 graduate students and 1-2 postdoctoral students. This is a little larger lab that I prefer and it sometimes puts a strain on resources at the Reserve pond facility. But with a group that size it also means that a diverse array of exciting work is ongoing and I am immensely enjoying the research right now.

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The Gnat's Eye Gnus is published by
the Department of Biology at the
University of Michigan,
Ann Arbor, MI 48109-1048

Editor: Pam Baker

Photographer: David Bay

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Brower Fellowship Presented to Two Graduate Students

Katherine (Katie) Nash Suding and Bruce Ferguson each received fellowships from the Helen Olsen Brower Fellowship in Environmental Studies. The fellowship, which was established four years ago by Mr. and Mrs. Casper Offut, has generated sufficient expendable dollars so the selection committee was able to make two awards this year. They decided the outstanding proposals by Katie and Bruce were both worthy of the $5,000 award.

Katie works in a tallgrass prairie plant community off Lake Erie in Ohio. In 1996, she began a study to determine what aspects of soil disturbances are necessary to support fugitive plant species in this community - species that are

Katie Nash-Suding

unable to grow in the undisturbed prairie and rely on gaps in the vegetation for establishment. Because disturbances may also increase the susceptibility to invasion by problematic exotic species, her work focuses on methods to conserve the native integrity of the tallgrass prairie.

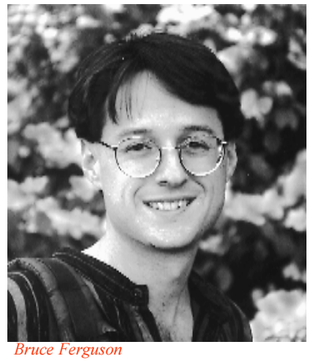
Katie says, "Because we have drastically altered disturbance regimes over the last two centuries, natural processes may no longer be in place to foster native species diversity in many plant communities." By combining field and greenhouse experiments, she aims to distinguish among the mechanisms that allow native fugitive species to persist and those that allow exotic species to invade, thereby determining effective management strategies for the few remaining prairie remnants.

Since any disturbance simultaneously changes a complex suite of biotic and abiotic factors, Katie's experimental work takes apart the effects of individual mechanisms of change from the overall effect of gap creation. By analyzing how different species respond to separate components of disturbance, her work allows her to assess which aspects of a disturbance benefit what types of species.

The Brower Fellowship will support Katie's efforts to continue her work to assess which aspects of a disturbance benefit prairie diversity and which aspects should be avoided. Her goals during the 1998 field season are to 1) document patterns of species compositional change due to disturbance at the prairie; 2) continue to determine how a species' competitive ability changes due to individual aspects of disturbance; 3) assess how nutrient availability is affected by different aspects of disturbance; and 4) compare the responses of additional species under greenhouse conditions. She hopes that this work will help in our understanding of the processes affected by disturbance, and which of these processes influence species compositional change.

Bruce Ferguson says "The Brower Fellowship is key to continuation of my dissertation work in El Petén, northern lowland Guatemala. El PetÉn contains one of the two large remaining forest patches in Central America, and about a third of the territory is protected by the Maya Biosphere Reserve (MBR). While agriculture is the most extensive and fastest-growing mode of land use in the Petén, relatively little effort has been invested in understanding the contribution of agriculture to conservation."

Due to the soil erosion, loss of fertility, secondary pest outbreaks and dramatic fluctuations in international markets associated with modern agriculture, these lands are more subject to abandonment than ever. In the Petén, 111,000 hectares of crop land were abandoned between 1987 and 1993, even as the total area of land devoted to agriculture increased (Lara 1994). Rain forest plants, adapted to frequent natural disturbance, recover rapidly from agriculture if their propagules and a suitable



Bruce Ferguson

microhabitat are preserved. High-input monocultural agriculture, however, seeks to minimize biological diversity and halt ecological succession.

Bruce is following forest development on land in and near the buffer zone of the MBR that was subjected to a spectrum of agricultural management. This area is home to Itz· and Yucatec Maya and their descendants, who employ a sophisticated system of agroforestry that includes over 140 species of crops and trees (Atran 1993) and represents a wealth of knowledge of rain forest succession. Shifting, or slash-and-burn cultivation, is another component of traditional agriculture in the Petén.

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Over the last forty years, however, cattle pastures and input-intensive monocultures have occupied huge tracts in the region, to some extent displacing more traditional forms of land management.

In addition to documenting contrasting successional patterns on these sites, Bruce is exploring the contribution to succession of an important subset of ecological relationships, plant-plant facilitation (positive interactions among individuals). A broad array of facilitative interactions in early and intermediate stages of succession leads to formation of regeneration "nuclei," patches of regeneration that expand from a remnant tree or early colonizer. Two facilitative mechanisms seem particularly likely to influence succession in the humid tropics: attraction of seed dispersing animals (mostly birds and bats), and indirect facilitation through suppression of a mutual competitor (in this case, competitive networks of herbs, vines, pioneer trees, and mid-successional trees). He anticipates that species and structural diversity and thus the pace of succession will be greatest in agroforestry and slash-and-burn systems, and least in high-input monocultures and pastures.

After completing his doctorate, Bruce plans to return to the PetÉn to continue his research and to focus on applying his findings to alleviating the region's conservation crisis. He will further test his ideas about the contribution of facilitation to succession by applying them to design of agroecosystems that initiate ecological restoration. For example, his results should point toward targets for structural diversity levels that increase seed dispersal by animals and optimize the light environment for tree seedlings. His results will also suggest at which stages of succession and in which light environments to remove vines or pioneer trees to allow other tree seedlings to develop, or when to leave those plants in place to prevent erosion and leaching of nutrients from the system. He hopes to continue working with local agroforesters to combine their knowledge of farming and silviculture with his understanding of ecological theory and scientific method to design and test agroforestry-for-restoration systems. He is hopeful that his results will help convince conservationists that instead of writing off agricultural land as lost to their cause, they must recognize the extent to which agroecosystems can harbor both biodiversity and the beginnings of forest regeneration.

Both Katie and Bruce would like to express their gratitude to the Offutts for their fellowships which contribute to conservation and ecological theory.

Graduate Student News

Recent PhDs

August 1997

Jan Louise Cassin completed her dissertation entitled "Balancing Costs and Benefits in a Mutualism: Conditionality in the Interaction Between the Grass, *Hystrix patula* Moench (Poaceae; Triticeae), and its Fungal Endophyte," under the direction of Michael Martin.

Erik S. Jules completed his dissertation entitled "History and Biological Consequences of Forest Fragmentation: A Study of *Trillium Ovatum* in Southwestern Oregon," under the direction of Beverly Rathcke.

Troy Allen Keller completed his dissertation entitled "Influence of an Omnivore, Nutrients, and Site Heterogeneity on Stream Algal and Invertebrate Communities," under the direction of Brian Hazlett.

Jennifer Blair McCormick completed her dissertation entitled "Molecular Characterization of *Drosophila melanogaster* RFamide Peptides," under the direction of Ruthann Nichols.

Pablo J. Pomposiello completed his dissertation entitled "Promoter Architecture and Transcriptional Regulation by the NAC Protien of *Klebsiella aerogenes*," under the direction of Robert Bender.

David Paul Warners completed his dissertation entitled "Plant Diversity in Sedge Meadows: Effects of Groundwater and Fire," under the direction of Beverly Rathcke.

Peder M. Yurista completed his dissertation entitled "The Effect of Temperature on the Biology of Two Cladocerans," under the direction of George W. Kling.

December 1997

Hui Liu completed his dissertation entitled " Cloning and Expression of a P2X Receptor from the Chick Embryo," under the direction of Richard I. Hume.

Gerald Ross Urquhart Jr. completed his dissertation entitled "Disturbance and Regeneration of Swamp Forests in Nicaragua: Evidence from Ecology and Paleoecology," under the direction of John H. Vandermeer.

Qun Zeng completed his dissertation entitled "p53, Bax, and Nedd-2: Components of Mouse Taste Cell Death Pathways," under the direction of Bruce Oakley.

May 1998

Dae-Gwon Ahn completed his dissertation entitled "Factors Controlling Axial Variation in the Threespine Stickleback, *Gasterosteus Aculeatus*, (Teleostei: Gasterosteidae): Patterns of Natural Variation and Their Genetic/Developmental Mechanisms," under the direction of Gregory C. Gibson.

Maiyon Park completed her dissertation entitled "Inductive and Lineage Mechanisms During Heart De

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velopment of Drosophila," under the direction of Rolf Andre Bodmer.

Haiyang Wang completed his dissertation entitled "Molecular and Functional Studies of Genes Involved in Controlling Cell Morphogenesis in *Arabidopsis thaliana*," under the direction of John W. Schiefelbein, Jr.

Zhen Zhou completed her dissertation entitled "Molecular Determinants of Rectification and Desensitization in the P2X2-Class of ATP-Gated Channels," under the direction of Richard I. Hume.

August 1998

Leland James Cseke completed his dissertation entitled "Molelcular Biology of Floral Scent Evolution: Characterization of Linalool Synthase (LIS) in Diverse Species," under the direction of Eran Pichersky.

Sharon Angela Jansa completed her dissertation entitled "Molecular Phylogeny and Biogeography of Madagascar's Native Rodents (Muridae: Nesomyinae)," under the direction of Philip Myers and Priscilla K. Tucker.

Rick A. Relya completed his dissertation entitled "Phenotypic plasticity in larval anurans," under the direction of Earl E. Werner.

Recent Masters Degrees

August 1997

Matthew Booker
Philippe Casgrain
Ann Gulley
Yan Lin
Katherine Teeter
Lita Yu

December 1997

James Hoyt
Nopporn Kichanantha
Jamie Bender
Karen Jo Rising
Pinglang Wang
Michael Koch

April 1998

Winfried Elis
Zhe Han
Kirsten Judd
Jennifer Kerker
Matthew Lewandowski
Christian Teh-Ping Liang
Kerry Paisley
Valerie Richter

Awards and Recognitions

One Term Dissertation Fellowships were awarded to **Sharon Jansa** (Myers and Tucker), **Shane Webb** (Smith and " Foighil), **Leland Cseke** (Pichersky), **David Treves** (Adams), **Joseph Scanio** (Werner and Bodmer), **Lena Nicolai** (Myers), and **Timothy Howard** (Goldberg) from the Rackham School of Graduate Studies.

A Sokol International Summer Research Fellowship was awarded to **Heather Heying** (Kluge).

Salvatore Cerchio (Payne) received a National Science Foundation Dissertation Improvement Grant.

Jihong Wang (Pichersky) and **Katharine Nash Suding** (Goldberg) were awarded Predoctoral Fellowships from the Rackham School of Graduate Studies.

Departmental dissertation/thesis grants were awarded in the Fall to **Jennifer Ast** (Kluge), **Thomas Bridgeman** (Kling), **Jacqueline Courteau** (Rathcke), **Dunrie Greiling** (Rathcke), **Amber Peters** (Smith), **Salvatore Cerchio** (Payne), and **Bruce Ferguson** (Vandermeer).

Helen Olson Brower Memorial Fellowships were awarded to **Bruce Ferguson** (Vandermeer) and **Katharine Nash Suding** (Goldberg).

The Emma J. Cole Award for Distinguished Graduate Student in Plant Biology was awarded to **Wendy Crookes** (Olsen). Runner up for the award was Jay West. Both students received monetary awards.

Wendy Crookes (Olsen) received a fellowship for the Cellular Biotechnology Training Program.

Derek Dimcheff (Wilson) received a fellowship from the Cancer Biology Training Program at the University of Michigan Medical School.

Pei-Jiun Chen (Ellis) won first prize for her poster at the 1998 Organogenesis Symposium.

Thomas Bridgeman (Kling) received the National Security Education Program Graduate International Fellowship.

Daniel DeJoode (Curran) received a fellowship for his dissertation research from the Charles A. and Anne Morrow Lindbergh Foundation.

Christopher O'Neal (Rathcke) was selected as an Outstanding Graduate Student Instructor by Rackham School of Graduate Studies.

Christopher Baraloto (Goldberg) was also selected as an Outstanding Graduate Student Instructor by Rackham School of Graduate Studies.

(Advisers names in parentheses)

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The University of Michigan, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action, including Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973. The University of Michigan is committed to a policy of nondiscrimination and equal opportunity for all persons regardless of race, sex, color, religion, creed, national origin or ancestry, age, marital status, sexual orientation, disability, or Vietnam-era veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be addressed to the University's Director of Affirmative Action & Title IX/Section 504 Coordinator, 4005 Wolverine Tower, Ann Arbor, MI 48109-1281, (734) 763-0235, TDD (734) 647-1388.

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Alumni News

Notes from around the world

The Twenties

Florence Anderson Kiskey (BS '27, MS '28 University of Chicago) was an assistant in Astronomy at U of M in 1926-27. She worked as a Math and Sciences instructor in Muskegon High School and Muskegon Community College from 1927 to 1934 when she married Fred S. Kiskey. She is now 91 years old and living in Muskegon.

The Thirties

Donald B. O'Brien (BA '39, MS '40) retired in 1981 from his position as Associate Superintendent of Thornton Township High Schools for Harvey, Dolton and South Holland, Illinois. He taught Biology for 25 years after his naval service in WWII. He currently resides in Glenview, Illinois.

Aino W. Osterberg (BS '30, MS '47) taught Biology in Junior and Senior High School from 1930 to 1940 in both Hancock and Big Rapids, Michigan. He was an intern for a year in the Clinical Laboratory at the Grace Hospital in Detroit, followed by employment in the same lab for 30 years. Aino retired in 1971 and traveled extensively for 20 years. He is now living in a retirement apartment in Dearborn.

The Forties

William G. Haag (BS '32 University of Kentucky, MS '33 Kentucky, PhD '48) first came to Ann Arbor in 1934 to study Vertebrate Paleontology with E.C. Case. He returned in 1941 as an assistant in Mammalogy for a year. He was also an active archeologist for TVA from 1935 to 1941. When the war was over, William received a PhD in Ethnozoology in a special arrangement between the Zoology and Anthropology departments. He is an Professor Emeritus of Anthropology at Louisiana State University where worked from 1952-1978. He currently resides in New Roads, Louisiana.

The Fifties

Alfred M. Beeton (BS '52, MS '54, PhD '58) retired August 31st from the National Oceanic and Atmospheric Administration where he served as Chief Scientist (acting). From 1986-1996 Alfred was Director of the Great Lakes Environmental Research Laboratory/ NOAA. From 1976 to 1986 he served as Director of the Great Lakes and Marine Waters Center at U of M. He was a Professor at the U of M School of Natural Resources as well as a Professor of Engineering in the Atmospheric, Oceanic and Space Sciences department. He is currently living in Ann Arbor.

Ted C. Michaud (BS '51 Purdue, MS '54, PhD '59 University of Texas) is a Professor Emeritus at Carroll College and lives in Waukesha, Wisconsin.

Robert A. Paterson (BA '49 Nevada, MA '52 Stanford, PhD '57) held many positions until his retirement in 1994 from the Biology Department at Virginia Tech. He served as Head of the Biology Department, Associate Dean for Administration, Associate Dean for Research and Graduate Studies, Interim Dean, Director of the Center for the Study of Science in Society and Science and Technology Studies Graduate Program. He performed research in Taxonomy, Ecology and distribution of aquatic fungi at the U of M Biological Station. He also did research in Maryland, Virginia, Alaska and Antarctica. He was a teacher of freshman Biology, undergraduate and graduate courses in Botany. He currently lives in Blacksburg, Virginia and is enjoying retirement—especially when he's traveling to visit his three children and three grandchildren.

David Ramsey (BS '53, MS '54, MHA '72) After receiving his MS in Microbiology, David Ramsey worked for 4 years as a Research Assistant at the Detroit Institute of Cancer Research. He then joined the Administrative staff at Harper Hospital in Detroit where he worked his way up to the position of Associate Administrator. Upon completing his MHA, he was hired as Administrator for the Iowa Methodist Medical Center. In 1983, David became their President and Chief Executive Officer. From 1993 to 1995 he served as President and CEO of the Iowa Health System in Des Moines. During his 23 year career at Iowa Methodist, he was named Iowa Health Citizen of the Year by the Combined Health Appeal. After his retirement in 1995, David and his wife Elinor moved to Arizona where they enjoy golfing and traveling. The couple have three sons and three grandchildren. David has received numerous prizes for his photography and works of his latest avocation, wood turning, have been included in various art shows.

Elvera Shappirio (BA Botany '53) Ellie is co-owner, with 12 other individuals of the cooperative Clay Gallery in Ann Arbor,. She is also co-owner of the cooperative Potters Guild with 42 others.

Alum Elvera Shappirio with her pottery

Peter Stettenheim (PhD '59) is living in Plainfield, New Hampshire. From 1958-1969, Peter worked as a

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Research Zoologist at the USDA Avian Anatomy Project at Michigan State University, doing research on the feathers and integument of birds. In 1969 he and his family moved to New Hampshire. Since then, he has held a series of ornithological editing jobs, first as editor of The Condor, a quarterly journal, and then as the organizer of a new series of life history accounts for all the breeding species of North American birds. Currently Peter is the coordinating editor for Recent Ornithological Literature, a compilation of abstracts from the worldwide scientific literature about birds. This bibliographic tool has been published for over 20 years and Internet availability is now in the works. Peter believes it is a logical extension of a notion that he learned in grad school - while it's essential to have a basic core of knowledge for research or teaching, it is equally important to know where to look it up when you need it.

Alum David Ramsey with his woodworking

Adrian M. Wenner (BS '51 Gustavus Adolphus College, MA '55 Chico State University, MS '58, PhD '61) "retired" from the University of California, Santa Barbara in January of 1993 but has maintained his office and lab on campus ever since. The topics of honey bee communication, monarch butterfly migration, island biogeography, environmental conservation and restoration, as well as studies about the philosophy and process of science, continue to occupy his time. In addition, Adrian takes time tending to the figs, persimmons, avocados, bananas, macadamia nuts, cherimoya, lemons, limes, oranges and grapefruit he grows in his garden.

The Sixties

Margaret E. Beard (BA '63 Wellesley, MS, PhD '67) is a Research Scientist at the Nathan Kline Institute in Orangeburg, New York. She lives in Pearl River, New York.

Thomas W. Brink (BS '68, MD '72 University of Minnesota) is a Physician specializing in Internal Medicine in Grand Rapids. He is a new employee of Butterworth Hospital, after 22 years of private practice. He is also a Clinical Associate Professor of Internal Medicine at Michigan State University, College of Human Medicine. Thomas has two daughters, one a sophomore at Carleton College and another a freshman in high school.

Earl Creutzburg (BS '67, MS '68) was appointed to the Board of Commissioners of the Champaign County (Illinois) Forest Preserve District on June 17th, 1997. Earl is a Professor of Biology at Parkland College and has been active in local environmental organizations for several years. He is steward of Patton Woods Nature Preserve in Champaign County.

Alden B. Glidden (BS '65, MD '69 Wayne State) is a Family Physician with his own practice in Klamath Falls, Oregon.

Michael D. Rohrer (BS '66, DDS '70, MS '78) is the Assistant Dean of Research at the University of Oklahoma, College of Dentistry. He is a Professor of Oral and Maxillofacial Pathology and Pathology in the Colleges of Dentistry and Medicine there. Michael was named to a four year term as a Presidential Professor—an honor which carries a $40,000 prize. He was also elected to a seven year term as a director of the American Board of Oral and Maxillofacial Pathology. In 1997, Michael received an award from the graduating dental class as their outstanding instructor for their four years of Dental School.

Randall E. Williams (BS '66, DDS '73) is a dentist in private practice in Valparaiso, Indiana. He is the lay leader of the New Life Wesleyan Church in Chesterton, Indiana. On October 4th, 1997, Randall attended the Promise Keepers "Stand in the Gap" rally in Washington, D.C.

Edwin F. VanderHeuvel (BA '59 Central Michigan, MA '63 Central Michigan, MA '67) retired in December of 1996 from St. Clair County Community College. He was a Biology Professor there for 28 years.

The Seventies

Marilyn K. Bland (PhD '72) is living in Boulder, Colorado. She fondly remembers Ed Voss, the Biological Station and the legendary botanical adventures of Herb and Florence Wagner.

Lynn H. Boyd (BS '73) currently lives in Crestwood, Kentucky and is an Assistant Professor of Operations Management at the University of Louisville.

John M. Cilluffo (BS '72, MD '77 Wayne State University, MS '83 University of Minnesota) After receiving his medical degree from Wayne State, John completed a residency at the Mayo Clinic in Rochester, Minnesota. He is currently a practicing Neurosurgeon and Chief of Neurosurgery at the Munson Medical Center in Traverse City. He is also the former President of the Michigan Association of Neurological Surgeons.

Forrest C. Dunaetz (BS '74) While traveling around the world working on cruise ships ten years ago, Forrest contracted the HIV virus. He is living in Reno, Nevada but happily remains healthy thanks to new medications. Forrest is the Coordinator of Frontline, the largest AIDS prevention program with HIV/AIDS speakers putting a face on the disease. Last year Frontline spoke to over

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16,000 people—mostly teens in northern Nevada. Frontline targets teens because they have one of the fastest growing rates of infection with the AIDS virus in the country. He would love to hear from ëold' friends at U of M.

Donald B. Heckenlively (BA '63 University of Denver, MS '65 New Mexico State University, PhD '74) After spending 5 years as Vice President for Academic Affairs at Hillsdale College, Donald has returned full time to teaching Biology at the College.

Arch Hopkins (PhD '73) lives on his family's farm in Granville, Illinois. He manages the 163 year old farm, operates his public accounting firm and keeps active in things botanical by gardening and leading wildflower walks at the local conservation area.

Tracy Kahn (BS '77, PhD '87 University of California) is Curator of University of California Riverside's Citrus Variety Collection. It is one of the world's most extensive collections of citrus and citrus relatives. With over 800 accessions, the fruits come in a variety of colors (including blue and brown) and sizes—from the size of one's fingernail to the size of one's head! Tracy attended the 1997 International Congress of Citrus Nurserymen, where she was interviewed by the French Press and had the opportunity to visit the large citrus collection of Corsica.

Lawrence R. Kupferschmidt (BS '68 Central Michigan University, MS '72) is the Chief Executive Officer of The Biotech Marketing Group, Inc. in Audubon, PA.

Cyndie Warbelow-Tack (BS '69 Alaska, MS '70) lives with her husband Stephen in Two Rivers, Alaska, thirty miles east of Fairbanks. Together they own and operate a general store, cafÉ and commercial greenhouses. She explains that the long daylight hours and lack of intense heat make interior Alaska an outstanding place to grow vegetables and flowers—the greenhouses are breathtaking in May and June! Their café is known for its pies and their greenhouses are known for its containers—especially hanging baskets. The couple have two children, Kaarin and Brett.

Frank A. Weir, II (BS '76, DDS '81, MBA & MSHA '97 University of Colorado) is President and Owner of Medicomm Consulting, Inc. in Colorado Springs, Colorado. He does healthcare consulting for Physicians, Dentists and Attorneys.

The Eighties

Ronald Allen (BA '72 Concordia IL, MS '74 Chicago State University, MS '84, PhD '93) is currently a Professor at Concordia College in Ann Arbor.

Heidi Babbitt-Cameron (BS '86, DC '90 Life College of Chiropractic) is working as a Chiropractor at Gregg Chiropractic in Garden City, Michigan.

Charles A. Crotteau (BS '88, MD '94 Wayne State University) wed wife Lori in 1997. He has recently finished residency in Family Medicine/General Practice and plans to practice in Chicago.

Cheryl Lynn Cushman (BS '83, DDS '88 Case Western Reserve, Periodontics Certificate '93 Medical College of Georgia) lives in Newnan, Georgia and is a Periodontist in nearby Austell.

Peter L. Fine (BS '89, MS '89, MD '93 New York University) is an Assistant Professor of Clinical Anesthesiology at the University of Medicine and Dentistry of New Jersey in Newark. He resides in East Orange.

Adam Goldsmith (BS '87, PhD '97) Adam recently received his PhD in Pharmacology and has accepted a postdoctoral position in the Internal Medicine Department/Hematology-Oncology division at the University of Michigan with Michael Clarke, MD.

Casey R. Lu (BS '80, MS '87, PhD '93) is now an Assistant Professor of Biology at Humboldt State University in Arcata, California.

Kevin S. Packman (BS '87, MD '91 Wayne State University) After receiving his degrees, Kevin pursued a general surgery residency at the Medical College of **Frank H. Ryan** (BS '82) is a Plastic Surgeon in Beverly Hills, California.

David Tellner (BS '86) is doing clinical research at Quintiles BRI, Inc. of Arlington , Virginia. He lives in Urbandale, Iowa. David was a captain in the US Marine Corps from 1989-1993.

Arnold Yasher (BS '86, MD '90 Northwestern) lives in Louisville, Kentucky with his wife Catheryn and sons William, four, and Jacob, two. David started practice in 1996 after completing a fellowship in Joint Replacement Surgery in La Jolla, California and residency at the University of Michigan Hospitals. He is a Clinical Instructor of Orthopedic Surgery at the University of Louisville. His wife is a fellow in Gynecologic Oncology there.

Marlene Zuk (BA '77 University of California-Santa Barbara, PhD '86) is a Biology Professor at the University of California-Riverside.

The Nineties

Manuel Alsina (BS '95) currently attends Baylor College of Medicine in Houston, Texas.

Anil V. Asgaonkar (BS '96) is a Medical Student at Wayne State University.

Rusty Brand (BS '90, MD '94) is currently serving in the US Navy as a flight surgeon for Carrier Air Wing One aboard the USS George Washington. He is on a deployment to the Mediterranean.

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David Casimir (BS '93, MS '95 University of Wisconsin, PhD '96 University of Wisconsin) is living in Mountain View, California and expects to finish his JD at Stanford in 1999.

Gretchen Ann Champion (BS '95) attends the medical school at Washington University in St. Louis, Missouri. She expects her degree in the year 2000.

David Chesler (BS '97) is a Graduate Student at New York University pursuing a PhD in Molecular Biology/Genetics.

Patti Crowley-Harpenau (BS '90, MS '95 Bowling Green State University) was married in August of 1997 to husband Chris. She is the Manager of Chemical Management Programs at Houghton International in Valley Forge, Pennsylvania.

Bryan R. Harvey (BS '92, DDS '97 Columbia University) is serving his first year as an oral and maxillofacial surgery resident at Ohio State University.

Jason Hoeksema (BS '95) is attending graduate school at the University of California-Davis. He is working on a PhD in Ecology.

Dria Howlett (MS '96) worked for the US Fish and Wildlife Service in Idaho at Grays Lake National Wildlife Refuge the summer after she graduated. She conducted a census of birds, small mammals and vegetation in an effort to lay a baseline for an experiment regarding land usage. For most of 1997 Dria worked at the Purple Martin Conservation Association: during the winter as an Assistant Office Manager, and during the summer observing Banded Purple Martins for conservation research and giving lectures at the Chautauqua Institute in New York for public education. Last September, Dria couldn't stand being away from Ann Arbor any longer, so she moved back to town. She worked briefly at the Humane Society of Huron Valley but can now be found back at the University, working at the Undergraduate Admissions Office.

Steven L. Jessup (PhD '94) spent three years as a postdoc at the University of California Berkeley, living aboard a '41 sloop in San Francisco Bay, and sailing the California coastal waters. In 1997, Steven married wife, Laura, and moved to Ashland, Oregon. He is an Assistant Professor at Southern Oregon University. His current research is in "systematics and evolution of alpine endemic plant species", mostly in the High Sierra and Cascade Peaks, but also Klamath Mountains and Nevada ranges.

Kristie Keeton (BS '94, MD '98) is attending the University of Illinois. She is pursuing a Master of Public Health in the Department of Maternal and Child Health before starting her residency in OB/Gyn.

Emmanuel S. King (BS '97) is currently a Medical Student at the University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, Piscataway.

Karen Krajewski (BS '95, MS '97 Indiana University) is a Genetic Counselor living in Sterling Heights. After graduating from Indiana University, Karen was hired by the department of Neurology at Harper Hospital in the Detroit Medical Center. She provides genetic counseling for patients and families who have or are at risk for various neurological disorders.

John LaGorio (BS '90, MD '94) lives in Howell and recently completed residency in Anesthesiology at U of M.

Howard C. Larky (BS '96) lives in Oak Park, Michigan. He is a second-year Medical Student at the Michigan State University College of Osteopathic Medicine.

Jennifer Lay (BS '95) now attends the University of Tennessee. She is a Graduate Student in their Department of Microbiology.

Brian Long (BS '96) is a second-year Medical Student at Vanderbilt University.

Baiju Malde (BS '95) is currently a Medical Student at the University of Pittsburgh.

Kevin E. McCarthy (BS '92, MD '97 Tufts University) is a General Surgery Resident at the Maine Medical Center in Portland, Maine.

Vikas Mehta (BS '95) lives in Manhattan and attends Cornell University Medical School. He plans on a career in Neurosurgery. He fondly remembers Dr. David Shappirio and Dr. Kathryn Tosney in the Biology Department. He explains that the two were instrumental in shaping his career and personal growth.

Maggie Morris (BS '95) lives in Dallas and is a Graduate Student at the University of Texas Southwestern Medical Center.

James R. Morales (BS '92) was a varsity wrestler all four years at Michigan (1988-92). After completing his undergraduate studies, James attended Robert Wood Johnson Medical School—formerly Rutgers—in Piscataway, New Jersey. He is currently doing his residency in family medicine and sports medicine at Robert Wood Johnson University Hospital in New Brunswick, New Jersey.

Gil Padula (BS '91, MD '97 Michigan State University) was an intern at St. Joseph Mercy Hospital in Ann Arbor from1997-98 and recently began a residency in Radiation Oncology at Memorial Sloan-Kettering Cancer Center in New York City.

Adam T. Ross (BS '93, MD '97 Johns Hopkins University) did one year of research in the Hearing Center at Johns Hopkins after graduation. He is now a Surgical Resident at the University of Pennsylvania specializing in otolaryngology.

Edmund P. Russell III (PhD '93) is an Assistant Professor in the Division of Technology, Culture and Communication in the Engineering School at the University of Virginia. He recently won the University of Virginia's prestigious Alumni Board of Trustees Teaching Award. He is also the recipient of the Rachel Carson Prize for Best PhD Dissertation in Environmental History, a Uni

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versity of Virginia Teaching Fellows Award and the National Science Foundation CAREER Award. In his work, Edmund builds bridges from science and technology to the humanities and social sciences. He continually strives to stimulate innovative and creative thinking about society and technology.

Haining Shao (PhD '95) is a Dermatology Resident at Case Western Reserve University Hospitals in Cleveland, Ohio.

Eleanor Slater (BS '97) lives in Natrona Heights, Pennsylvania. She works as a Chemist for PPG Industries in nearby Springdale.

Sarah Sloane (PhD '92) lives in a small town in west-central Maine with her husband Drew and children Hannah, eight, and Ellie, three. She is an Assistant Professor at the University of Maine, Farmington. Previously, Sarah was a visiting Professor at Franklin & Marshall College. She is continuing research on behavior and ecology of Bushtits in southeast Arizona and beginning research on Black-capped Chickadee winter social behavior in Maine as well as comparative studies on thermal properties of nests.

Nina Damali Abubakari Smith (BS '97, BA '97) is a Masters of Public Health Student in the Epidemiology Department the University of Minnesota. Nina also serves as a research assistant with the Family Planning Grant at Community University Health Care Center/Variety Children's Clinic.

Adam Smooke (BS '97) will start Dental School at the University of Pittsburgh in the Fall of 1998.

Jose J. Terrasa-Soler (BS '90 Mount Saint Mary's College, MS '92, MES '97 Yale) is an Environmental Scientist . He works for CSA Architects & Engineers in San Juan, Puerto Rico.

Adam Weissman (BS '92, MD '96 New York Medical College) is a second-year Emergency Room Resident at the University of Connecticut Emergency Medical Residency. He lives in New Briton, Connecticut.

Meredith Williams (BS '97) is a Medical Student at Johns Hopkins University in Baltimore.

Kevin Winer (BS '97) Lives in Kansas City, Missouri with wife, Lisa. Kevin is a Criminalist with the Kansas City Police Department, Regional Criminalistics Laboratory. There he does training in the recovery, identification, and processing of DNA and trace evidence. He examines and analyses crime scene evidence including hair, fiber and DNA

In Memoriam
BURTON T. OSTENSON
1912-1996

Burt passed away on September 27th, 1996. He received his MS ('38) and PhD in Zoology ('48) from Michigan. He married Nancy "Betty" Winchester in Ann Arbor in 1937. Burt served in the South Pacific during World War II as a communications officer in the United States Navy and continued his service for 23 years in the Naval Reserves, retiring as a Lieutenant Commander. After the War, he taught at Michigan State University. In 1947 he moved to Parkland, Washington and joined the faculty of Pacific Lutheran College. During his 42 years at Parkland, he developed curricula in Field Biology and Ecology, as well as instructing a wide variety of Biology courses. During his tenure, Burt served as Chairman of Biology, General Science, and Earth Science Departments. He is well remembered for his popular class on the Natural History of the Pacific Northwest. Burt participated in a variety of biology research projects at multiple institutions including: Michigan, Stanford, Harvard, Cape Thompson Project Chariot in Alaska, and the University of Washington NSF Project in the Antarctic.

In Memoriam
ANDREW S. WATSON, M.D.
1912-1996

Andrew S. Watson, M.D., (B.S. Zoology, '42) a pioneer in the field of Law and Psychiatry died in his home in Ann Arbor on April 2, 1998; he was 77. At the time of his death, Dr. Watson was Professor Emeritus of Law in the Law School and Professor Emeritus of Medicine in the Medical School at the University of Michigan where he taught since 1959. He served in the US Army in Europe during WWII as a member of the Medical Service Corps. Dr. Watson earned his MD Degree from Temple University in 1950. He did his Post Graduate training at the University of Pennsylvania Graduate Hospital and his psychiatric residency at Temple University. Concurrently, he began his training as a psychoanalyst at the Philadelphia Psychoanalytic Institute, completing that work in 1959. At the UM law school, Dr. Watson taught a course in Law and Psychiatry and regularly collaborated with his colleagues in teaching Criminal Law and Family Law. He also taught Negotiation and worked actively in legal clinical training. He had a particular interest in the lawyer-client relationship. A book, "The Lawyer in the Interviewing and Counseling Process," grew out of that work. His Psychiatry for Lawyers has been a standard text for many years. In 1978 Dr. Watson received the Isaac Ray Award from the American Psychiatric Association and the Seymour Pollack Distinguished Achievement Award from the American Academy of Psychiatry and Law in 1989. In the Medical School, Dr. Watson taught students and psychiatric residents. He was a supervisor in family conjoint therapy, and in his private practice he frequently treated couples. He was also a prominent forensic psychiatrist. Surviving are Joyce, his wife of thirty years; four sons, Andrew and David Watson and John and Steven Spiesberger. A memorial service was held on April 19, 1998 at the Lawyer's Club at the University of Michigan.

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Have you thought of making the *BIOLOGY DEPARTMENT ALUMNI ENDOWMENT* part of your estate plan?

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Ultimately your gift will help ensure the continued excellence of Biological Sciences at Michigan and will be used, at your instruction, for faculty, student or program support.

A bequest is yet another way to provide for the Biology Department Alumni Endowment. Bequests to the University of Michigan have traditionally been a major source of support, and a bequest also provides your estate with a charitable tax deduction.

If you would like more information on deferred giving options to benefit the Biology Department Alumni Endowment, please call the Biology Department at (734) 764-7427. If you prefer, you may call or write directly to the University's Office of Trusts and Bequests:

Director
The Office of Trusts and Bequests
Wolverine Tower
3003 S. State Street
Ann Arbor, Michigan 48109-1288

Telephone: (734) 647-6085
FAX: (734) 998-6100

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Alumni Reply Form - We'd like to hear from you! Please complete and return this form for our alumni files. You may mail it to the address below, fax it to (734) 647-0884, e-mail the information to bio.alum@umich.edu, or submit the information via the web at www.biology.lsa.umich.edu/newsletters.html.

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