Biological Sciences

ALUMNI NEWS

University of Missouri Columbia

Summer 1993

BIO LINES . . . .

The Graduate Program in Biology

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Work on Acoustic Communication Wins Carl Gerhardt the Presidential Award

Ann Daughtridge Receives Chancellor's Staff Recognition Award

Jim Stolen Returns for the 1992 Alumni Get-together

Dr. James O. Davis Receives the 1993 College of Arts and Science Distinguished Alumnus Award

News from Alumni
Greetings again,

There's been a longer gap between issues of your Alumni News than I'd like. I will try not to let that happen again.

Last issue we focused on our undergraduate program, so this time I thought we'd bring you up to date on our graduate program. The lead article highlights three of our current class of award-winning graduate students.

Our faculty and staff continue to garner awards for teaching. This year Jim Carrel received awards from both the Arts & Science Student Government and the William T. Kemper Foundation. John Faaborg, last year's triple award winner, received the Governor's Award for Excellence in Teaching this year. Ms. Ann Daughtridge, staff coordinator of our introductory biology laboratories, received the Chancellor's Staff Recognition Award.

Two of our alumni were prominent in news around campus. Dr. Edward Blaine was appointed Director of the MU Dalton Cardiovascular Research Center, and Dr. James O. Davis received the 1993 Arts and Science Distinguished Alumnus Award. This issue also presents the last of the responses to our first Alumni News Survey. Next issue will carry responses to the survey enclosed in the last issue of Alumni News.

Finally, I hope you enjoy the article on Jim Stoien and last year's Alumni Get-together. We look forward to seeing you at the Second Annual Get-together this fall.

Sincerely,

John David, Chairman

BIOLOGICAL SCIENCES ALUMNI NEWS

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Cover illustration: Lefevre Hall (opened in 1914) and Tucker Hall (opened in 1969).
Announcing

The Second Annual
Division of Biological Sciences

Alumni Get-together

Saturday, October 23
(Homecoming)

Tucker Hall

Noon

FOOD  FUN  FRIENDS

See Related Story Inside

More Details in Fall Mailing!
The Graduate Program in Biology at Mizzou

The graduate program in Biological Sciences has undergone some remarkable changes in the past few years.

We have grown. Our population now stands at 55 students, 80% of whom are PhD candidates. Twenty three of these students are supported on Graduate Teaching Assistantships and thirty two on highly competitive national predoctoral fellowships (NSF Predoctoral Fellowships, USDA National Needs Graduate Fellowships, NIH Training Grant in Molecular Genetics), university predoctoral fellowships (Huggins Fellowships, Ridge Fellowships, Interdisciplinary Plant Group Fellowships), and on research grants awarded to individual faculty.

We have focused. A major strength of the Division is its continuing reorganization to provide research and graduate training in specifically those areas considered most central to the life sciences in the next decade: cellular, molecular and developmental biology; neurobiology; and ecology, evolutionary biology and behavior. We have at the same time maintained our close ties with both the Interdisciplinary Plant Group and the interdisciplinary Molecular Biology Program. All of our current students are training in one of these critical areas.

We have developed a series of new programs that offer our graduate students unique opportunities in preparation for advanced professional careers.

- We encourage incoming PhD candidates to participate in research activities in the laboratories of two or three faculty members during their first year of training. These "rotations" of two to four months each naturally serve as a means of selecting an advisor, but they also promote closer interaction with faculty, research personnel and other graduate students. And they expose new graduate students to research areas and techniques they might not otherwise encounter.

One of our recent graduates, Eric Walters, completes his last experiment . . . .

... and then discusses the results with his mentor Prof. Joel Maruniak. Eric is now a postdoctoral fellow at the Roche Institute of Molecular Biology in Nutley, New Jersey.
The Graduate Program

- One year ago we instituted a new "Professional Skills Course" organized by Professors Candi Galen and Allan Harrelson. In this course, all new graduate students hear research presentations from our faculty and learn practical skills including: how the graduate school system works; use of the MU and Divisional computer networks; producing graphs, figures and tables on the Macintosh; photographic and darkroom techniques; and use of a computer-driven slide maker. Students are also introduced to the preparation and review of research grant proposals.

- We sponsor several series of visiting lectureships that bring distinguished scholars to the campus. Special arrangements are made to allow graduate students to meet informally with these speakers.

We encourage all graduate degree candidates to attend at least two national scientific meetings. On one such occasion doctoral candidates are expected to present their own research data. We provide financial support to cover travel and registration expenses. We also provide limited funds to cover travel, registration, and subsistence expenses of graduate students who attend a workshop or summer course at a specialized technical training facility such as Cold Spring Harbor, Woods Hole, the Oak Ridge, Argonne or Brookhaven National Laboratories, or field courses offered by the Organization for Tropical Studies.

Among the several measures of the quality of a graduate program, and the commitment of the faculty to that program, one of the most important is the careers of the program's graduates. Recent graduates of the Division of Biological Sciences doctoral program are now on the faculty at: Villanova, Iowa, Minnesota, Texas A & M, University of California-San Francisco, Kansas State, Avila College, Washington University-St. Louis, Washington State, Wisconsin, Dana College and Yale.

1993 MU Graduate Student Teaching Award Winners

Steven H. Hinshaw received his BS from the University of Maine in 1991. As an undergraduate, Steve worked on a number of field projects involving calls, behavior and mating success in the spring peeper (Pseudacris crucifer), and the gray treefrog (Hyla versicolor) and co-authored a number of papers.

Steve is an enthusiastic instructor who conveys his excitement about biology to students. He regularly provides entertaining demonstrations during class time and demonstrates an unusual dedication to teaching. The students and other TAs in the Introductory Biology laboratory call him "Mr. Science" and look forward to his unique insights and perspectives on general biology topics.

Steven Hinshaw and Mark Bolt
Steve came to MU and joined Dr. Carl Gerhardt's laboratory in August 1991. His research project is a test of the hypothesis that a polyploidy event that created the gray treefrog *Hyla versicolor* (a tetraploid) from the gray treefrog *Hyla chrysoscelis* (a diploid) accounts for the origin of call variation between the two species. Steve will receive his MS degree in the Summer of 1993. Steve plans to move to Maine to join his wife and complete a Teacher Certification program so he can teach high school.

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Mark W. Bolt received his BS from Alma College, MI, in 1991. As an undergraduate Mark worked on a project involving the effects of a sea cucumber toxin on myeloma cells.

Mark approaches his teaching duties in the *Genetics* discussion sections with enthusiasm and determination. He has good ideas and does not hesitate to share them with the instructor and other TAs. He has a knack of knowing what types of problems will give the students trouble, and has very innovative approaches for overcoming difficulties. For instance, he devised a modified "Jeopardy" game in which he would give a definition and the students would answer with a question ("What is transcription?"). Mark's commitment to good teaching is evident, he is dedicated, conscientious, and altruistic. He approaches his teaching duties with enthusiasm and determination.

Mark joined Dr. Paul Mahoney's laboratory in January 1993. His PhD research project will involve the characterization of *Drosophila* genes encoding cell adhesion and growth control molecules.

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Min Wu was born in Nanjing, China, and received her BS and MS degrees in neurophysiology from Nanjing University. Min spent three years as a research assistant in the Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences in Beijing where she co-authored papers on the effects of stimulation of the dorsal raphe nucleus on the activities of cerebellar Purkinje cells, and the influence of intense noise on synaptic ultrastructure of the auditory cortex in the mouse.

In 1989, Min entered our PhD program and joined Dr. Philip Jen's laboratory to study the auditory physiology of echolocating bats, specifically the encoding of the pulse repetition rate and duration by neurons in the pontine nuclei. Min has also participated in studying auditory spatial sensitivity of midbrain and pontine neurons with two other research associates in Dr. Jen's laboratory. Since joining Dr. Jen's laboratory, Min has co-authored 23 national and local presentations and 8 published papers. Min will receive her PhD degree in December 1993. A paper based upon her thesis work has already been submitted for publication.
Jim Carrel Receives Two Teaching Awards

For the second year in a row, one of our faculty received two top teaching awards. Professor Jim Carrel received the 1992 Arts and Science Student Government Purple Chalk Award for Excellence in Teaching, and one of ten 1993 William T. Kemper Fellowships for Teaching Excellence. The $10,000 Kemper Foundation Fellowships "honor and reward MU faculty who have demonstrated outstanding teaching ability." Kemper Fellows are nominated by their peers and selected by a panel of distinguished teachers. Recipients of the Arts and Science Purple Chalk Award are nominated by students, and selected by students. Jim thus had the double honor of being recognized by both his students and his peers.

Jim's approach to teaching, and his success in achieving his goals, comes alive in letters from former students. One wrote of Jim "During my sophomore year, I was a student in Professor Carrel's Honors Biology class. As an instructor, Professor Carrel exhibited an outstanding ability to stimulate interest in the course material. I looked forward eagerly to each class period, both lectures and laboratories. Class topics included current biological issues of interest to us as students. (We) were encouraged to ask more questions and to pursue a greater understanding of the material covered in class. (He) made us think for ourselves."

A second student wrote, "My first semester at MU I had the privilege of taking Biology 10GH with Dr. James Carrel. You can imagine how surprised I was when I went to the first Bio 10 lab and saw Dr. Carrel standing there saying 'hi' to all of us as we walked in. I had expected a TA. What impressed me even more was the fact that Dr. Carrel learned the names of everyone in the class, so that eventually 70 to 80 people felt like 20 to 30. (He) still keeps in touch with quite a few of us as we move through our college years. I remember many days when several members of the class and myself would stay after (class) because we and Dr. Carrel would get into a conversation on college, science, or life in general, and would talk for another hour. To this day I still stop by and see Dr. Carrel once or twice a semester just to talk."

And finally, from a third former student, "As a student in an upper level ecology course for biology majors, I experienced first hand Jim's classroom teaching style. His earnestness, sincerity, and ease in the classroom, coupled with his ability to inspire students to both study and think, were positive experiences. As I worked in his laboratory, I experienced Jim in a different teaching light. From him I learned the principles of research methods, applied statistics, and most importantly I learned from him what qualities are required to make a true scientist. He approaches his research with honesty, integrity, and an open mind. Lastly, there are things I learned from Jim Carrel beyond the scope of chemical ecology, natural selection and research methods. Jim teaches by example, and from him I have learned the value of integrity, fairness, tolerance for things and those different from myself, and impeccable citizenry."

Jim's excellence in both formal and informal teaching, and his dedication to his students both in and out of the classroom, deserves recognition and applause. Congratulations Jim!
Work on Acoustic Communication Wins Carl Gerhardt the Presidential Award

Carl Gerhardt was named winner of the 1992 Presidential Award for Research, an award that recognizes one faculty member in the entire UM System each year for a sustained record of nationally and internationally recognized research. Carl's goal is to understand how animal communication systems work, and how they evolved. Carl studies treefrogs, which have the same basic neural elements as higher animals and are particularly attractive for both quantitative study and experimental manipulation.

Male treefrogs produce complex but stereotyped acoustic signals; females respond phonotactically to playbacks of both natural and synthetic (computer-generated) sounds. By systematically varying the acoustic properties of electronically synthesized sounds, and observing female response, Carl has identified the acoustic properties of the male call which influence mate choice and identified the "rules" for sound pattern recognition for each of a half-dozen species.

Knowledge about acoustic properties and mate choice serves as a framework for studying the underlying neural mechanisms. A search for auditory neurons that selectively respond to acoustic features of known biological significance has led to the identification of neurons that are highly selective for response to acoustic properties that serve to identify the species. A subset of neurons in the midbrain (torus semicircularis) respond optimally only when both the pulse repetition rate and the shape (amplitude-length) of the pulses have species-typical values. These isolated neural circuits, like the animals themselves, respond optimally only to complex sounds (for example, cases where two different frequencies are sounded simultaneously). In this, there are striking similarities to the recognition of vowel sounds in human speech.

The recognition of sound is genetically inherited, not learned, and that has allowed Carl to apply evolutionary approaches to his research and to test the major hypothesis of the sexual selection theory, originally proposed by Charles Darwin.

Female tree frog shows her preference for a particular male call by climbing the speaker that emits it.

as a complementary evolutionary force to natural selection. According to the sexual selection theory, some genes contribute to a male's "attractiveness" as a mate; females choose males carrying those genes as mates with a greater frequency, and thus the genes themselves appear with an increasing frequency in each subsequent generation.

Carl and his colleagues have found that females of two species of gray treefrog (Hyala chrysoscelis and H. versicolor) show a hierarchy of preferences in their response to male calls. Strong preferences are based on properties that identify the species of the calling male; weak preferences on properties that correlate with the energetic cost of producing the call. Females prefer the calls that are the most expensive for the males to produce. They may thereby be assuring that the male they choose is at least in good physical condition. Interestingly, the absolute weighting of features of the call varies geographically. Females from areas where both species appear frequently weight species-specific properties more strongly than females in areas where only one species is generally found.

Most recently Carl has turned to an analysis of the genetic mechanisms of polyploid speciation in gray treefrogs. Using mitochondrial DNA sequences, Carl and his colleague Dr. Richard Sage hope to establish whether the polyploid species has arisen more than one time from the diploid species, and whether that origin involved another species (polyploidy via hybridization) or whether it occurred within the diploid species spontaneously (autopolyploidy).

With his research success, Carl has received national and international recognition. His research has been continuously funded by the National Science Foundation since 1973, his papers have been cited over 800 times, he serves on the editorial boards of three journals, he has served on three National Science Foundation grant review panels, and in 1991 he was elected a Fellow of the Animal Behavior Society.
Ann Daughtridge Receives Chancellor's Staff Recognition Award

Most of the time things run smoothly in the general biology labs, but it doesn't happen by chance. The nearly 1,800 students who have taken the labs each year can thank Ann Daughtridge. She ordered supplies, maintained equipment, prepared materials for lab sessions and trouble-shot when experiments went awry.

Ann received the 1993 Chancellor's Staff Recognition Award in the technical/paraprofessional category. She worked at MU for 8 1/2 years. With the help of two student assistants, she prepared laboratories for as many as 48 sections each semester. Although she sometimes juggled five sections at one time, colleagues say she maintained her grace and poise under pressure.

"Ann is a confidante and counselor to both students and TAs," one co-worker said. "People regularly come to her for help because she is pleasant and understanding. In spite of the enormous load of her job, she treats these visitors with respect and does not begrudge the interruption."

For Ann, it was a personal responsibility to make sure students had a positive experience in her labs. That could mean improvising equipment when budgets were tight, or coming to work early, or on a Sunday to set up labs for the next day. Sometimes she even came to work when ill. "If I'm not here and things aren't ready in the labs, I have a thousand students who didn't learn anything that week," she said.

In addition, faculty said they could rely on her advice and feedback in both the logistics and the content of the general biology laboratories. And she helped many teaching assistants through "class shock" when experiments just didn't work.

"Ann works with up to 10 different graduate teaching assistants and six undergraduate teaching assistants each semester," one faculty member said. "I am always amazed at the harmony. These TAs frequently move on to other courses, but they often come back to Ann for advice or assistance."

Shortly after receiving this award, Ann accepted a new position, with a promotion and increased supervisory responsibilities. She is now in charge of the Microbiology laboratories at Southwest Missouri State University. We will all miss her, and we wish her well.

John Faaborg Honored Again

Last year John Faaborg received the William T. Kemper Fellowship for Teaching Excellence, the Maxine C. Shutz Award for Distinguished Teaching, and the Arts and Science Student Government Purple Chalk Award. This year John was honored as the MU campus recipient of the Governor's Award for Excellence in Teaching.
Jim Stoien Returns for the 1992 Alumni Get-together

A small but very enthusiastic group of alumni gathered before the Homecoming football game last October for the first Division of Biological Sciences Alumni Get-together. We were happy to see them all, but none more so than Jim Stoien. Jim left Mizzou in 1975 with an MA in Biological Sciences and a National Science Foundation Doctoral Fellowship to study genetics at the University of Colorado in Boulder. He had a terrific career in front of him. Less than a year into his doctoral program however, he was hit by an automobile while riding his bicycle. He sustained severe head injuries and underwent extensive brain surgery. As a consequence Jim lost his ability to communicate, and two years later his doctors concluded he would never speak again. Jim never gave up. He began to converse, although awkwardly, with a speech synthesizer. Then one day, 4 1/2 years after the accident, he began to speak. He has progressed to a vocabulary of over 200 words and communicates well enough to live on his own and work as a waiter in the dietary department at Barnes Hospital in St. Louis. Jim was named 1991 Client of the Year by the St. Louis chapter of the Missouri Rehabilitation Association. A measure of Jim's independence, and pluck, is that he arrived at the get-together unannounced, by bus, from St. Louis.

Jim plans to be back next year, and we will have a Homecoming football ticket waiting for him. We hope to see many of the rest of you too--although you'll have to get your own tickets. More details later in a fall mailing.

Ed Blaine Named Director of Dalton Cardiovascular Research Center

Dr. Edward Blaine (AB, Zoology, '62; MA, Zoology, '67; PhD, Physiology, '70) has been named Director of the Dalton Cardiovascular Research Center. Dalton, located in Research Park on Providence Road, houses faculty from several departments and colleges on campus, including Professor Richard Wang of Biological Sciences. Originally called the Dalton Space Sciences Center, the Dalton Center has most recently focused on cardiovascular research. The appointment of Ed Blaine is specifically designed to strengthen this focus.

When Ed left MU in 1970 he completed postdoctorates at Albert Einstein Medical Center and the Howard Florey Institute of Experimental Physiology and Medicine in Australia before accepting an Assistant Professorship at the University of Pittsburgh School of Medicine. In 1977, Ed joined the Merck Institute for Therapeutic Research where he progressed to become Director of the Renal Pharmacology program. While at Merck, Ed developed orally active renal-selective prostaglandin analogs for use in treatment of hypertension, discovered and characterized a renin inhibi-
Ed Blaine

ator, and directed a multidisciplinary group that was responsible for the first synthesis and clinical trials of atrial natriuretic peptide.

In 1988, Ed was recruited to Searle/Monsanto to direct a major industrial laboratory to be located within Washington University Medical School. New programs initiated under his direction included: the development of nonpeptide angiotensin II antagonists; the development of renal selective agents to block adrenergic nerve activity only to the kidney; and initial exploratory projects on cGMP phosphodiesterase inhibitors, endothelin, and atheroma formation.

Ed returned to MU with the goal of making the Dalton Research Center a world leader in cardiovascular research. We're glad to have him back.

In Memorium

Professor Charles Gowans passed away on March 13th, 1993. Chuck came to the University of Missouri as an Assistant Professor of Botany in 1957. He was promoted to Professor of Botany and Genetics in 1968. In 1970 he elected to join the newly formed Division of Biological Sciences. He was instrumental in helping the Division through its formative years. His students will remember him as a stimulating teacher in General Genetics, Genetics Laboratory, Experimental Botany, Physiological Genetics, Genetics of Microorganisms, Microbes and Man, General Phycology, Organismal Biology, Basic Microbiology and Protozoology.

Chuck published over 25 papers on algal genetics, many co-authored with his seven doctoral and four master's students. Five of his doctoral students are now themselves Professors of Biology and one, Bobby Roy Jones, is Chairman of Biology at Southwestern University (TN). Chuck's research was supported by the NSF and NIH. He received the Lalor Foundation Award in 1958 and was selected a Visiting Professor at the National Taiwan University and an NSF Lecturer at the Academia Sinica. In 1972 Chuck was honored as Fulbright-Hays Research Scholar at the Institut fur Mikrobiologie der Universitat Gottingen. Later he was nominated as an Exchange Scholar to Czechoslovakia by the U.S. National Academy of Sciences; the nomination was refused by the Czech Academy. Chuck considered the nomination by the U.S. Academy, and the refusal by the Czech Academy, a double honor. He retired as Professor Emeritus of Biological Sciences in 1987.

Chuck and his wife, Ann, remained in Columbia after his retirement, and stayed active in community affairs, including the local chapter of the Sierra Club. He also was interested in Irish and U.S. History. At the time of his death Chuck was about to publish a book on General James Shields, one of his ancestors who served in the Mexican and Civil wars and was a U.S. Senator from Illinois, Minnesota and Missouri. Chuck is survived by Ann and their three children.
Dr. James O. Davis Receives the 1993 College of Arts and Science Distinguished Alumnus Award

Jim Davis began his career at MU in the Department of Zoology in Lefevre Hall under the mentorship of Dr. Daniel Mazia, a distinguished cellular physiologist. Jim received his PhD in 1942, and subsequently completed an MD at Washington University School of Medicine in 1945. After an internship in medicine and a fellowship in cardiology at Barnes Hospital, Dr. Davis joined the U.S. Public Health Service. In 1947 he was appointed to a full-time position in medical research at the National Institutes of Health in Bethesda, MD. Two years later, Dr. James A. Shannon became the director of the newly established National Heart Institute (NHI), and he invited Dr. Davis to establish a research program on experimental heart failure in the NHI. Jim accepted, and thus began a long series of experiments on congestive heart failure which led to his most important scientific discovery, that the renin-angiotensin system provides the primary control mechanism for aldosterone secretion. Dr. Davis was also the first to block the renin-angiotensin system in experimental heart failure by use of an angiotensin II antagonist. Later he confirmed this finding by use of the oral converting enzyme inhibitor, captopril. Several converting enzyme inhibitors have since been developed and are used extensively in the treatment of heart disease, heart failure, and hypertension.

During his 20 years at National Institute of Health, Jim trained many postdoctoral fellows, but he missed the daily contact with students and began teaching part-time at the Johns Hopkins and University of Virginia Medical Schools. In 1966 he returned to MU as chairman of the Department of Physiology in the School of Medicine. He served as director of the medical physiology course and as director of the graduate student program in physiology. Nearly all of his postdoctoral fellows at NIH and MU, and several of his PhD students, are now themselves in academic medicine.

While at MU, Jim served as chairman of the Council for High Blood Research of the American Heart Association, as president of the Cardiovascular Section of the American Physiological Society, and as president of the International Society of Hypertension. His many honors include the Sigma Xi Research Award (MU), Golden Apple Teaching Award in Medicine (MU), Modern Medicine Distinguished Achievement Award for "proof of the involvement of the kidney in the production of aldosterone", the MU Faculty/Alumni Award, Outstanding Alumnus Award from Northeastern Oklahoma State University, Franz Volhard Lecturer of the International Society of Hypertension, Ciba Award for Hypertension Research by the American Heart Association, the Carl J. Wiggers Award for Cardiovascular Research of the American Physiological Society, Citation of Merit Award in Medicine (MU), the establishment of the James O. Davis Distinguished Professorship in Cardiovascular Research (MU), and election to the National Academy of Sciences in 1982.

Dr. Davis is a native Columbian. He and his wife continue to reside in Columbia.

The Arts and Science Distinguished Alumni Awards, established in 1984, allow the college each year to recognize some of its many alumni whose professional contributions have enhanced their respective disciplines and the quality of life for humankind, and in so doing to reflect well on the College of Arts and Science. Dr. James O. Davis was one of six honorees in 1993.
News from Alumni

1950-59

Ronald G. Severs (AB, Zoology, 1953) completed his formal education with an MD from the University of Iowa in 1956. He had a private surgical practice and served in the USAF until retirement as a Brigadier General in 1986. He is now settled in Destiny, FL.

David H. Snyder (AB, Zoology, 1958; MA, Zoology, 1962; PhD, Biology, University of Notre Dame, 1971) is currently professor of biology at Austin Peay State University, Clarksville, TN.

Mark Thoman (AB, Zoology, 1958; MD, 1962) specializes in pediatric toxicology. He is a fellow of the American Academy of Pediatrics and the American Academy of Clinical Toxicology, and editor of Veterinary and Human Toxicology. Mark has served as president of the American Academy of Clinical Toxicology and has received the North Dakota Governor's Award for developing statewide handicapped services, and the Cystic Fibrosis Foundation Award for 10 years as a Cystic Fibrosis Clinic Director. He maintains an active practice in Des Moines (IA).

1960-69

Edward J. Krull (MA, Botany, 1961; PhD, Botany, 1966) taught biology for five years at Chicago State University, and four years at a pre-college high school in Bremen, Germany. Since 1977 he has taught botany, biology and chemistry at a private college-preparatory high school in Ojai, CA.

Gary L. Lentz (AB, Zoology, 1965; PhD, Entomology, Iowa State University) is currently a professor in the Entomology and Plant Pathology Department at the University of Tennessee.

Joseph (Marty) Shoulder (AB, Zoology, 1966; MD, 1970) has a private psychiatry practice in Napa, CA. Marty is married, with two children, and is the founder of the Napa Valley chapter of Physicians for Social Responsibility.

James G. Hazel, Jr. (AB, Zoology, 1967; MD, 1971) is Chief of Radiology at Pemiscott County Hospital in Hayti, MO. Jim is past-president of the local Kiwanis Chapter and president of Pemiscott County Medical Society. He and his wife own a golf course.

Mark A. Bauman (AB, Zoology, 1967; MA, Zoology, 1974; MD, 1980) is a partner (internal medicine) in the Kneibert Clinic, Poplar Bluff, MO. Mark is a member of the Missouri Native Plant Society and the Nature Conservancy. He is married and growing plants and kids.

Gary L. Mueller (AB, Zoology, 1968; MD, 1972) has served in the US Air Force since 1977. He has been chief of the Internal Medicine Clinic, chief of Endocrinology Service, chairman of Medicine, chief of Clinical Medicine and chief of Hospital Services/Deputy Commander. This fall he became Commander of the USAF Hospital, Fairchild AFB, Spokane, WA. Gary is a Fellow of the Endocrine Society and served as a physician on the National Boy Scout Jamboree Staff in 1989.

C. Rick Fleschner (AB, Zoology, 1969; PhD, Biochemistry, 1983) is currently an Assistant Professor of Biochemistry at the Kirksville College of Osteopathic Medicine.

1970-79

Bradford W. Russell (AB, Biology, 1976; DMD, Washington University School of Dental Medicine, 1981) is self-employed in Shellsburg, MO. He participated in a lay evangelism project in 1983 in Taiwan, organized through the Missouri Southern Baptist Convention.

James E. Bieser (BS, Microbiology, 1977; MA, Health Care Administration, 1981) is Executive Vice President of Inova Health System in Roanoke, VA. James is president of the MU Health Services Management Alumni Association, and co-chairman of their fund raising drive.

Laura (Foster) Hueneke (AB, Biology, 1977) obtained both National Science Foundation and Danforth Graduate Fellowships to complete her PhD in Ecology and Evolutionary Biology at Cornell University. Her postdoctoral work at Savannah River Ecology Lab and Stanford University was supported by a US Department of Energy postdoctoral fellowship. Laura is an Assistant Professor of Biology at New Mexico State University where she works in plant community and population ecology (in the desert and in tropical Hawaiian forests). She is active in the conservation of rare Southwestern plants.

Charlie Kormanik (AB, Biology, 1977; MBA, Marketing, 1979) is Vice-president and General Manager of the Midwest office of Procon, a pharmaceutical consulting and communications company.

Brenda K. (Eaton) Bryan (AB, Microbiology, 1978; MBA, Marketing, UM-Kansas City, 1982) is a Senior Research Analyst in Market Research with Payless Cashways, Inc., Olathe, KS.
Joseph R. Garlich (AB, Biology, 1978; AB, Chemistry, 1978; PhD Chemistry, 1982) is a Project Leader in Functional Chemicals Research with Dow Chemical Co. in Lake Jackson, TX.

Peter J. Newman (BS, Biology, 1976; MS, Biology, 1978; PhD, Pathology, St. Louis University, 1983) is an Investigator in Platelet Molecular Biology at the Blood Center Research Institute, Milwaukee, WI. Peter has published 27 research papers, including one which was featured on the cover of Science in 1990. His research has been continuously funded by NIH from 1985-1995.

Joe Fessler (BS, Biology, 1978) was a computer programmer/analyst with Sheller-Globe Corp., United Telecom, and Control Data Corp. He is currently a Senior Data Coordinator in the Environmental Chemistry Division of Midwest Research Institute, Kansas City, MO.

Daniel Whithaus (AB, Microbiology, 1978; MBA, Washington University, 1988) is a research biologist in the Animal Sciences Division of Monsanto Company, Manchester, MO.

Carol Robinson (AB, Biology, 1978; MD, 1985) completed her residency in internal medicine and pediatrics at St. Louis University. Carol is in private practice in internal medicine with the Health Key Medical Group, Shrewsbury, MO.

Stuart E. Coe (AB, Biology, 1979; DDS, UM Kansas City School of Dentistry, 1983) has established a thriving dental practice in Roswell, GA.

Debra Jacobson Meyer (AB, Biology, 1979) was a Medical Research Technician with Washington University Medical School and SmithKline Clinical Labs. She is currently a Research Biologist with Monsanto Co. in St. Louis, MO.

John Despain (AB, Biology, 1979; MD, 1984) is an Assistant Professor of Medicine, Division of Dermatology at MU.

1980-89

Jeffrey W. Donaldson (AB, Biology, 1984) was a research specialist in the MU Animal Science Department. He is currently an Account Executive with Datastorm Technologies in Columbia.

Jody McInerney (AB, Biology, 1984) is a chemist with Sierra Environmental Engineering, Inc., Tustin, CA. She and her husband Joseph C. Hone were expecting a child in October.

Paul McCormick (AB, Microbiology, 1985; MS, Bacteriology, University of Wisconsin, 1986; DO, Kirksville College of Osteopathic Medicine, 1990) is a resident in Anesthesiology at St. Joseph's Hospital, Syracuse, NY.

Jon D. Rush (AB, Biology, 1985; MD, 1989) is a resident in Internal Medicine at the UMC Hospital.

Kent D. Walker (AB, Biology, 1985; MD, Tulane University, 1989) is a dermatology resident at UMC.


Selina Ozmat (AB, Biology, 1986) was recently promoted to Acquisition Editor with the Health-Related Professions Division of W.B. Saunders Publishing Co., Philadelphia, PA.

Andrea Stevens (AB, Biology, 1986; MD, 1990) has started a residency in pediatrics at the University of Virginia.

Randall S. Grogan (BS, Biology, 1986; MBA, Business, 1989) is a staff consultant in Management Consulting with the accounting firm Price Waterhouse in Hazelwood, MO.

Bartholomew David Sak (AB, Biology 1987; MA, Biology, 1989) is in the MD program at UMC. Bart received the superior Graduate Achievement Award in 1989 and an NIH Summer Research Fellowship Award (Bethesda, MD) in 1990.

Risa Spieddoch (AB, Biology, 1988) is in the third year of the MD program at the University of Kansas Medical Center, Kansas City, KS.

Jeff Stein (AB, Biology, 1988) finished his Master's in Health Administration in 1990 and is currently an Administrative Specialist with Humana, Inc., Humana West Hills, Los Angeles.

Rick Klann (PhD, Biology, 1988) is an Assistant Professor at Upper Iowa University, Maynard, IA.

J. Charles Mace (AB, Biology, 1988; MA, Biology, 1990) recently entered the MD program at UMC. He received the American Heart Association Student Scholarship in Cardiovascular Disease for research in the summer of 1990.
In Memorium

Robert Dale Warmbrot (AB, 1969, Botany/Chemistry; PhD, 1973, Botany, Wisconsin) was appointed the first head of the Biotechnology Information Center at the National Agricultural Library in 1990. Previously he had been an Alexander von Humboldt Fellow at the University of Göttingen, Germany, assistant professor of botany at Ohio State University, and a senior research fellow at the U.S. Department of Agriculture Climate Stress Laboratory in Beltsville, MD. Robert's botanical and horticultural research, funded by the U.S. Department of Agriculture and the National Science Foundation, was directed at the improvement of crop yields. In 1991, Robert and his colleagues published one of the first reports describing similarities in proteins involved in cell-cell communication structures in both plants and animals. In 1990 he received the USDA-Agriculture Research Service Certificate of Merit for Outstanding Performance, and in 1992 the USDA-National Agricultural Library Certificate of Merit for Excellence at the Biotechnology Information Center. Robert was an avid singer with the University of Maryland Chorus and University of Wisconsin Concert Choir. He performed at Lincoln Center's Alice Tully Hall, the Kennedy Center and the 1985 Presidential Inauguration. Robert died in December, 1992 at the age of 45.

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