



Department of
Chemistry

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Chairman's Message

As I look back over the twelve years in which we have published the UMSL CHEMIST, I realize how lucky I am to be able to continue to report good news about the chemistry department, year after year. Much of this involves information about alumni and thus it is your responses and contacts with us that enable me to provide that information to your former colleagues. Please continue to let us know how you are doing by completing the form at the end of this newsletter.

I wish to thank those of you who responded to the questionnaire we circulated earlier this year. We are undergoing a Self-Study and we included the results of the study in the report. If any of you would like to see a copy of the results of the questionnaire, please call Lisa Johnson at 553-5311. The responses were very useful to us not only in meeting one of the requirements of the Study but in providing us with input about our programs, etc. Not everything was positive and that helps too because if there are features of our programs that former students think we should improve or change, then we need to hear about them.

The academic year 1992-93 had many successes and some disappointments. The major disappointment was that a valuable colleague, Professor James P. Riehl, resigned to assume the chair of the chemistry department at Michigan Technological University in Houghton, MI. We understand that he was made an offer he couldn't refuse. Jim went with our very best wishes and he is missed around here by students, staff and faculty. Jim was an extremely valuable

colleague, friend, teacher, researcher, departmental citizen and racquetball partner and we will all miss him immensely. He and I shared a room at the ACS meeting in San Diego and I go to Houghton next week to present a seminar. Jim was deeply involved in this department and I am sure he will do an excellent job. I look forward to seeing him in his new environment.

On the positive side we were given permission to replace Jim and we have been able to hire an outstanding young chemist, Dr. Zhi Xu who received his Ph.D. degree at the University of Pittsburgh and is currently a postdoc at the University of Illinois Champaign-Urbana. This appointment is discussed elsewhere in this newsletter. We have also received some funds which will allow us to add an organic chemists next year, so we are finally growing again. Four year ago we had 20 regular faculty members and now we have only 16. More about this later. Another item of good news is that we have added an NMR specialist who many of you know. Dr. Janet Braddock-Wilking, B.A., 1985, who received a Ph.D. degree from Washington University. More about her later.

The other major developments in the department have been in the improvement of instrumentation for both research and teaching. Last year we described the anticipated acquisition of a Bruker ARX-500 NMR spectrometer. The instrument was delivered last summer and we are delighted. It was the reason why we decided to hire the NMR specialist. We recently heard that we were successful in a grant we wrote to the NSF for a 300 MHz spectrometer and we also obtained \$90K from the Missouri Research Board which enabled us to purchase a new probe for the XL-300, and work stations for off-line processing of data. The lab, in the east wing of the second floor of Benton Hall was doubled in size and Drs. Anderson and Braddock-Wilking are visiting the instrument manufacturers, as I write, in order to evaluate the spectrometer which are available. The other development was that we also received funds to purchase a second X-ray diffractometer. We also

DON'T FORGET THE ALUMNI RECEPTION. IT WILL BE HELD ON FRIDAY APRIL 22, FROM 7:00 TO 10:00 PM, IN THE ALUMNI CENTER, 7956 NATURAL BRIDGE ROAD (ACROSS THE STREET FROM WOODS HALL). PLEASE CALL RANDA SCHNEIDER OR LISA JOHNSON AT 553-5312 TO INDICATE WHETHER YOU WILL BE ABLE TO ATTEND. WE LOOK FORWARD TO SEEING YOU.

obtained funds from the Missouri Research Board and the Center for Molecular Electronics which will allow us to develop a truly outstanding X-ray diffraction facility. This is described below.

Many features of our activity were very successful last year. The undergraduate program is very healthy. Towards the end of the 1980s there was a drop in the number of chemistry majors, reflecting a national trend. Both ACS and NSF data bear this out. Since then our program has steadily grown such that this year we expect to graduate about 30 BA/BS majors. The Chemistry Club is doing very well and the amount of undergraduate research going on in the department is as high as ever. The research is funded by the Monsanto Company and a grant from the NSF. The graduate programs are similarly growing, albeit more slowly, but at the moment we have an all-time high enrollment of 40 full-time students and 31 part-time students. This May we will award our 100th MS degree, our 55th Ph.D. degree and we will almost reach 650 in total BS/BS graduates. The academic year 1992-93 was an excellent year for research in the department. The 18 faculty members published 52 research articles during the year, presented 70 papers at professional meetings and raised \$927K in external funds. Faculty members also obtained \$257K in additional funds from University sources. This academic year will be even better as we expect to raise well over \$1 million in external research funding and the success of internal funding applications has similarly increased.

The Missouri Research Board has proved to be an excellent source of funds for student and faculty research. It was established two years ago as a replacement for the old Weldon Spring Fund. Competition is system-wide and there are no quotas for the campuses. We have done quite well with almost all the junior faculty and several senior faculty receiving funding. I was asked to make a presentation to the University's Board of Curators on the department's use of Research Board funding and on research in the department in general. The reception my remarks received was very good and we were well-served by the whole exercise.

The face of the campus continues to change. On the southwest corner of Benton Hall a large greenhouse nears completion. It is part of the International Center for Tropical Ecology. The jury is still out as to whether it enhances the look of the building but I am optimistic and look forward to when it is finished. Construction will begin soon just to its north on the Center for Molecular Electronics. The project has been delayed as lawyers fight over an environmental impact assessment. The Computer Center building opened last summer and we were able to use one of the "computer classrooms" when Dr. Brammer taught the

X-ray diffraction course this semester. The light rail system, *MetroLink* is now in operation and the two campus stations are heavily used. The delay in the component between North Hanley and the airport continues but completion is expected in early summer. If you haven't seen the campus recently, you will be impressed by all the changes. We invite you to come here and we would be happy to show you around.

We look forward to seeing many of you at the Annual Alumni Reception on Friday, April 22, at the Alumni Center. The details are on the front page. If you are unable to attend we hope you will keep in touch and inform us of you activities. We enjoy reporting your successes in the UMSL CHEMIST, and your former colleagues enjoy reading about them. We also hope you will let us know if you have jobs available or if you are looking for positions. We sometimes can be of help in both respects. In conclusion we wish you all the very best in your professional and personal lives.

Sincerely,

Lawrence Barton

Alumni Information

1968-1969

Gary Jacob, B.S., Science Fellow & Head of Glycosciences at Monsanto in St. Louis was moved to G. D. Searle last fall. His research work continues to be very productive. Gary published several papers recently including the one appearing in the inaugural issue of *Perspectives in Drug Discovery and Design* on "Therapeutic Approaches to HIV".

James Reilly, B.S., continues to enjoy teaching at Kemper Military Academy in Lexington MO. Jim sent a homemade Christmas card to the department since he could not find a special one at the store! He spoke fondly of the wonderful times he and his classmates had here. He also announced that he was married (9/21/91) and that the past two years have been the happiest of his life.

1969-1970

Harold Messler, B.S., and his wife Caroline are proud parents of a new son, Mark Joseph, born 8/2/93. They now have five children, the oldest Sherry is 21 and is a student at Logan College. She did her organic chemistry at UM-St. Louis with Dr. Armbruster. Harold is now a member of the Alumni Association Board and continues to be very supportive of the department. Through his efforts we received a FT-IR recently for use in the organic chemistry courses.

Sanford Asher, B.A., was an invited symposium speaker at the American Chemical Society Midwest Regional Meeting in Columbia, MO, in November. Sandy visited the department and presented a seminar on his way to Columbia on November 9. He is a Professor of Chemistry at the University of Pittsburgh and was, until recently, Director of a Materials Research Center which he and a colleague established and funded.

1970-1971

Dorothy (Cooke) Greco, B.S., was in the department recently when one of her children was attending a program. Dorothy visited with Dr. Garin, her research advisor when she was an undergraduate here, and the editor. She and her husband Al (B.A., Biology, 1969) fund the William and Erma Cooke Fellowship, the only endowed fellowship in the department.

Keith Zeisel, B.A., wrote to us about his experience at UM-St. Louis. "My case was rather unusual and now over 20 years ago. I was a Physics major at Rolla and a co-op student with McDonnell Douglas. While in St. Louis I took chemistry courses at night and spent one full daytime semester at UMSL. I graduated simultaneously with a BA in Chemistry from UMSL and a BS in Physics from UMR. I went on to grad. School at Purdue in Physics prior to being inducted into the Army. Since my army tour, I have worked at MDC primarily in Physics. I enjoyed my schooling at UMSL and found the faculty, especially Dr. Armbruster, to be most helpful and accommodating. My undergraduate work in the sciences at UMR and UMSL helped me be better prepared than my counterparts at grad. school. Since returning to MDC, I have continued to take courses on the UMSL campus. First getting an Engineering Management MS from the Rolla extension, then taking some business courses, and now nearly completing the teacher certification coursework. Keep up the good work. UMSL's chemistry department is well regarded and the university as a whole provides a valuable educational experience for many metropolitan area students".

1971-1972

Glen Snow, B.A., is Manager of Market Support Polymer (Water Soluble) Business Development Group at Calgon Corporation in Pittsburg, PA. Glen attended our Alumni Reception two years ago and was the attendee who had travelled the farthest to attend the function.

1972-1973

Fred Mitchell, B.S., recently provided us with some surplus equipment and materials. Fred is involved in analytical chemistry at the Regional FDA Laboratory in

St. Louis, where he has been since graduation. We were pleased to be able to give him a tour of our facilities which are unrecognizable to someone who hasn't been here in the past six or more years.

1975-1976

Jeffrey Wheatley, B.S., is a Senior Research Associate at Terrapin Technologies, Inc., in San Francisco. Until last year Jeff had been with the Rainin Company, in Berkeley, CA, developing products for High Performance Liquid Chromatography.

Andrew Ratermann, B.S., is a Senior Development Chemist, Reinforced Plastics at GenCorp Automotive, Marion, Indiana. Andy received a Ph.D. degree from Indiana University and spent some time as a postdoc at the University of Bristol, in the UK.

Tom Solsten, B.S., has been very helpful in steering surplus equipment our way. Tom is a mass spectroscopist at Monsanto. He holds a Ph.D. degree from the University of Arizona.

1976-1977

David Laurence, M.S., a member of our first class of M.S. graduates passed away this past year. David had been with Petrolite for many years and we understand he was to be married shortly before his tragic death in a swimming accident. He is missed both by former colleagues at UM-St. Louis and his recent colleagues at Petrolite.

1977-1978

Denise Lutes (Howe), B.S., is a chemistry teacher at Northwest High School in House Springs, Jefferson County, MO. She contacted us about participating in the Advanced Credit Program which is run for us by Professor Armbruster.

Mark Riva, B.S., (M.S., 1984) is a Senior Analytical Chemist at Warner Jenkinson. He has been there since graduation.

1978-1979

Barbara Soltz, Ph.D., left McDonnell Douglas in May 1993, where she had been for about 12 years to start her own consulting firm. Barb is working in semiconductor laser devices and systems, an area she has been involved with since 1983. She lives in Spring Valley, NY.

Dolores Vermont, M.S., was featured in a *St. Louis Post-Dispatch* article on Dec. 14, 1993. She is Environmental Services Supervisor for Monsanto and

was named president of the Missouri Waste Control Coalition.

1979-1980

Razia Ahmed, Ph.D., until recently was a supervisor at PDC Laboratories in Peoria, IL. She supervised and managed the Trace Organic Section; evaluated employees' performance on six months and yearly basis; wrote proposals for the acquisition of new instruments and other equipment and was involved in recruitment. We understand she may have left PDC recently.

Mark Leiber, B.S., is working in the Agricultural Group of Monsanto. He received his Masters degree in 1985. He is currently working on the manufacturing process for the active ingredient (glyphosate) in *Roundup* herbicide. Mark tells us he has been married for 10 years and he and his wife have three wonderful children.

1980-1981

Tom Reinsel, B.S., graduated from Washington University School of Medicine in 1986, and trained in orthopedic surgery at Cook County Hospital and Northwestern in Chicago. Following residency, he did a spine fellowship at Rush University in Chicago and also at the University of Vermont. He joined the staff at the Ohio State University Orthopedic Surgery in Columbus, OH. He is participating in some basic spine biomechanical research as well as teaching residents and conducting a practice limited to spine problems.

Shelly Kumar, Ph.D., received his tenure at Governor's State University. Shelly and his wife Sangeeta purchased their first home and were expecting their first baby in Dec. 1993. Shelly sent one paper for publication to JOC and presented three papers, one at the ACS Meeting in Denver, the second at the International Fullerene Conference in Santa Barbara and the third at the ACS meeting in Chicago.

1981-1982

Jean Flake Aubuchon, B.S., has been a medical technologist with Smith-Kline Beecham in St. Louis since graduation. Jean has board registry from the American Society of Clinical Pathologists.

Michael Drain, B.A., was working with Jean-Marie Lehn in Strasbourg, France until last October. Mike is formally on leave from his position as an adjunct faculty member at Rockefeller University in New York City. Mike is currently working in the laboratory of Professor Dewey Holten at Washington University. He is currently confronting the vagaries of the US job

market which even if one has published with different Nobel prize winner, as has Mike, can be very difficult. Mike recently agreed to be the speaker at the *Annual Alumni Lecture and Awards Function* on May 2.

Kathleen Janus, B.S., (B.A., Biology 1975) is doing analytical chemistry in a pharmaceutical quality control laboratory at Monsanto in St. Louis. She works in the facility in which work on BST is conducted

1982-1983

Martin Mantler, B.S., working at KV. Pharmaceutical after spending several years at Petrolite in St. Louis..

Jim Timper, M.S., is still working at the FDA in Washington, D.C. He recently applied to George Washington University in for the degree Master of Arts in the field of applied mathematics.

Angelo Vangel, B.S., is with Petrolite in St. Louis and recently had breakfast with the editor, a representative from the University's development staff and **Bruce Ritts B.S., 1979, (M.S., 1983)** to explore avenues of support for the institution. These two have been very supportive of their Alma Mater,

John Wightman, B.A., is employed by the U.S. Air Force as chief of emergency services at Wright-Patterson AFB, OH. His recent activities been designing disaster-preparedness plans and training programs for medical center. Also lectures across country on abdominal and pelvic trauma. He is an Assistant Professor of Emergency Medicine and a Diplomat of the American Board of Emergency Medicine. He earned two Air Force achievement Medals for medical readiness missions.

Steve Szymczak, B.S., is Product Manager for Betz Energy Chemicals in Ventura, CA. His responsibility is for the demulsifier, paraffin, and water clarifier product lines. He recently won two company presidential awards for significant technical contributions. Steve was a Development Chemist at Petrolite in St. Louis for five years prior to moving to California. Steve traveled around the world in his Petrolite position. He wrote to us and we quote, "I'd like to thank the Chemistry Department at UM-St. Louis for demanding excellence and for not lowering academic standards just because chemistry is hard. Keep up the good work". We certainly appreciate Steve's comments.

Joseph Muo, B.S., continues to keep us abreast of his research in digestive enzymes at the St. Mary's Health Center in Richmond Heights. Joe is an active in the American Society for Clinical Pathologists. A recent concern of his was the correct nomenclature for

isoamylases for which there appears to be a controversy. Joe has been working on these amylase enzymes for several years and has developed procedures for their separation and analysis.

Judy Shih, B.A., joined Baxter Diagnostics and moved to Ft. Lauderdale last year. She is working in Therapeutic Drug Monitoring Assays. Judy holds a Ph.D. degree in biochemistry from the University of Kansas.

1983-1984

Rajiv Banavali, Ph.D., stopped by the chemistry department for a visit in October 1993. He is systems manager for the Process Chemistry Laboratory at the Rohm and Haas Company, the Houston Plant and global research manager for the *Primene Amine* business. During his tenure at Rohm and Haas, Rajiv has recruited two former chemistry colleagues, **Wil VanArsdale, B.S., 78, Ph.D., 84, and Sudhir Agarwal**, who was a postdoctoral research fellow with Professor Robert Murray.

1984-1985

Sandra Aubuchon, B.S., is with Mallinckrodt Specialty Chemicals Company. We understand that she is engaged to be married to **Richard Wisneski, B.A., 1986**, who is also with Mallinckrodt Specialty Chemicals Company. We recently saw Rich during a tour of the Mallinckrodt facility. We understand the happy day is scheduled for May 21.

1985-1986

Shari Keith, B.A., is at Monsanto working in the fundamental fluid research group. Shari was kind enough to arrange for us to acquire some surplus equipment last year. Her daughter "little Jennifer" was 13 at the time and she had two other children, Robert and Jamie Jean who were 11/2 and 4 months, respectively.

James Meyer, B.S., is Color Chemist at Warner Jenkinson. Although we have not seen him for several years, we recently spoke on the telephone and he was surprised to find that we remembered him. We don't forget our former students!

Bill Schmitt, B.A., is a postdoc. at University of Illinois-Champaign. Cyclotron Facility. He has been working on polarized proton scattering experiments where information about the basic nucleon-nucleon interaction is extracted. Bill received his Ph.D. degree in physics at M.I.T. We were pleased to see him at the last Alumni Reception and he hopes to be at the next one (April 22).

1986-1987

Steven Kolodziej, B.S., (Ph.D., 1993) and his wife Mary have a baby girl, Rebecca Elizabeth, born 2-10-94. Steve is a postdoc at Washington University Medical School working on the synthesis of constrained analogs of cholecystokinin with Professor Garland Marshall.

Alan Schneider, B.S., is an analytical chemist for International Technology in Austin, TX. Alan was in the department over the Thanksgiving holiday with a former colleague from Iowa State University (Dr. Yiwei Ding) who, as a result of this visit, started a term as apoddoctoral researcher in the laboratory of Professor Corey.

Clay Wilson, B.A., a graduate from East. Virginia Medical Institute specialized in anesthesiology. He is a second year intern at St. Louis University. We were informed about Clay by his brother Erik who is a senior chemistry major in the department.

Tianhe Zhu, M.S., is now in Rowland Heights California. We are not sure what he is doing but he and his wife Polly recently made a generous contribution and the address was "*Tim's International*".

1987-1988

Christy John, Ph.D., is still at the George Washington University Medical Center, D.C. He is teaching and actively pursuing research on iodinated benzamides as malignant melanoma imaging agents. He submitted an abstract for the society that was accepted for an oral presentation and published three papers. His family is doing fine. Joshua is already going to school; Rachel will start preschool soon and his wife Vera is enjoying her job as an NMR medical technologist. We understand that Christy received an important grant recently but we do not know the details.

Susan Holl, B.S., lives in Los Gatos, CA. She received a Ph.D. degree from Washington University in St. Louis under the direction of Dr. Jacob Schaeffer.

John Boylan, Ph.D., is the departmental NMR specialist in the chemistry department at Boston College. John was in the department here last year and we understand he is in the best of health.

Chitase Lee, M.S., is in Ann Arbor at Parke-Davis involved in synthesis in the CNS Pharmaceuticals Division. His wife **Sherry Chang, Ph.D.**, is looking for a position.

1988-1989

Humayun S. Ateeq, Ph.D., is an Assistant Professor in the H.E.J. Research Institute of Chemistry at the University of Karachi, Pakistan. Humy had been a postdoc at Wayne State University with Professor Rigby. We understand he is now married but he hasn't released any details to us.

1989-1990

Minren Lin, Ph.D., continues as a postdoc at Penn State University in the group of Professor A. Sen. He attended the ACS meeting in Chicago in August 93 and was able to attend the alumni get-together. Minren is a loyal supporter of the department and maintains very good contact with the department.

Michael Crowley, B.S., is a research chemist, working on pharmaceutical coatings, at Warner Jenkinson Co., Inc. Mike recently became and Alumni Agents. He provided us with a useful list of other alumni who are with his company. Mike recently enrolled in the MBA program at UM-St. Louis. Among other alumni at Warner Jenkinson is **Paul Lindemann, B.A.**, who is employed as a chemist.

Teresa Hardesty, B.A., continues to work with United Technologies. During the past year she has been promoted twice, once from Chemist to Senior chemist and thence to Products Applications Chemist. Teresa enjoys the traveling she now does regularly in her new position.

Michael Kopp, B.A., was a Research Chemist, Technical Director at Camie-Campbell, Inc., in St. Louis, MO but we understand he has moved to Denver but we lack the details.

Young June Cho, Ph.D., is working with Dr. Mobashery at Wayne State University, Michigan. He will be going to Korea for a visit for about three weeks and also be checking the Korean Market for a job. His wife will finish her Ph.D. in the summer of 1994.

Michael Meisinger, B.A., (M.S., 1993) is now working at Mallinckrodt Specialty Chemicals Co. in St. Louis.

1990-1991

Linda McMillan (Adams), Ph.D., is Technical Marketing Scientist at Tripos Associates, Inc. in St. Louis. She is expecting her first child in June 1994.

1991-1992

Jack Hammer, B.A., has moved to New Haven and began his study towards his Ph.D. degree in chemistry at Yale University in the Fall 1993. He describes his feelings as a mixture of exhilaration and terror.

Linda Thompson, B.A., is now with Lorvic Corporation in St. Louis. At Lorvic she works with **Francine Longcor, B.S., 1969, Ph.D. 1984**. Until last Spring, Linda had been at United Technologies with another UM-St. Louis chemistry graduate, **Teresa Hardesty, B.A., 1990**, also in St. Louis

Ming-Shinn Hwang, M.S., immigrated to New Zealand in November 1993.

1992-1993

Gregory Bertin, B.A., is a Chemist at Nalco, Food and Beverage Research Group, in Naperville, IL.

Mark F. Bono, B.A., lives in Portland Oregon and is currently a teaching assistant at Portland State University. He is in the process of applying for a graduate student research position at Oregon Health Sciences University, also in Portland.

Melinda McCann, B.S., is employed by United Technologies in St. Louis.

Estatira Razavi, B.A., is in the process of applying to medical school as well as taking additional courses in biology and chemistry. Last summer she presented a poster at the annual meeting of the American Crystallographic Association, describing research on some nickel complexes conducted under the direction of Dr. Brammer. The poster received a favorable write-up in both the newsletters of the American Crystallographic Association and the International Union of Crystallography and a paper will shortly be submitted for publication to *Inorganic Chemistry*.

Michael Schreiner, B.S., is now with Mallinckrodt Specialty Chemicals Co. in St. Louis. Mike had been with Sigma Chemical company for several years during which time he was completing his degree as a part-time student. At least on one occasion, Mike received an *Employee of the Month* award when he was with Sigma.

1993-1994

Byron Madkins, M.S., will be graduating this Spring. He is an Associate Chemist at Warner Jenkinson.

Jeffrey Siria, Ph.D., (M.S., 1987) is back with Industrial Testing Laboratories in St. Louis. Jeff had been with Environmental Science and Engineering for a couple of years.

ACS National Meetings

At the meeting in Chicago in September 1993, we hosted an ACS Alumni Hour. Several alumni attended including **Mike Merriman, B. S., 1987**, **Christie Silver, B. S., 1991**, **Minren Lin, Ph.D.**

1990, Shelly Kumar, Ph.D., 1982 and Steve Kolodziej, B.S., 1987, Ph.D., 1993.

At the ACS Meeting in San Diego in March 1994, several alumni were present but we are sure we missed some and we apologize in advance if we neglected to mention anyone who was in attendance.

Gang Bao, Ph.D., 1993, was seen at the exposition **working at the booth of Pharmigen Inc.** Gang has been employed at this biotech company for several months and is involved in purifying monoclonal antibodies. During the meeting **Nursen Coruh, Ph.D., 1991**, was a gracious host to several of us. Nursen is a postdoc at UC-San Diego and will leave this summer to assume an assistant professor appointment at Middle East Technical University, in Ankara, in her native Turkey. **Robert W. Dugger, B. S., 1975** presented a lecture in the symposium *Making the Transition from Medicinal to Process Development* entitled "From Milligrams to Kilograms: Pfizer's Renal Inhibitors". Bob has been at Pfizer for several years. He received a Ph.D. degree from UC-Berkely and was previously on the faculty at the University of Miami in Oxford Ohio. **Ko-Chung Lin, Ph.D., 1987**, attended this symposium at the meeting. K-C is a Senior Scientist at Biogen in Boston. He did postdoctoral research at the University of Michigan, and worked at Monsanto in St. Louis prior to moving to Biogen a couple of years ago. **Kathy Fallis, Ph.D., 1993** was also at the meeting. Kathy is currently a postdoc with Professor Gordon Stone at Baylor University. **Donna G. Friedman, Ph.D., 1980** attended the meeting as a newly elected Councilor, one of four representing the St. Louis Section. Donna is a faculty member at Florissant Valley Community College and served as chairman of the St. Louis Section of the ACS in 1992. Although we did not see him **Mike Hauser, B.A., 1981, M.S., 1986**, was there. Mike is on the faculty at St. Louis Community College at Meremac and is in charge of the College Awards for the ACS St. Louis Section. **Floris Homan, B.S., 1985, Ph.D., 1989**, was also at the meeting. Floris has been with Telis Pharmaceutical in San Diego for the past couple of years. Floris and his wife **Peggy (Ponzar, B.S., 1985)** are raising a family in California. **Randy F. Johnston, B.S., 1980**, who is assistant professor of chemistry at Memphis State University, and received a Ph.D. degree at Texas Tech, presented two posters on his research in cyclopentadienyl-manganesetricarbonyl chemistry in the inorganic poster session. **Steve Lawrence, B.A., 1982, Ph.D., 1989** came to the poster session at which former faculty member James Riehl and graduate student, Pat Chernovitz were presenting a paper. Steve who had been on the faculty at Rockhurst College in Kansas City, joined the faculty of Saginaw Valley State College as an analytical chemist. Steve tells us that he used the material published in the *Journal of Chemical Education*. last year by Professors Harris and O'Brien to revamp the instrumental analysis course at his institution and is

now working on establishing an environmental chemistry option. **Minren Lin, Ph.D., 1988**, was not at the meeting but he was complimented by his postdoc adviser during a presentation. Professor A Sen presented a paper in the symposium on activation of alkanes and in describing the work he described Minren as an "amazing person" and indicated that Minren had done all the work on an article about to appear as a communication in *Nature* on "Direct Catalytic Oxidation of methane to acetic acid". Tim Wentzel was at this latter symposium. Tim is a Research Scientist at Union Carbide. He received a Ph.D. degree from Cornell University. We also ran into him at the Denver Meeting in April 1993 where he presented a paper in the inorganic program on the oxidation of olefins to aldehydes using a Pd/Cu catalyst.

Center for Molecular Electronics and Departmental Facilities

The construction of the facility is delayed, as indicated earlier but much activity is evident. The equipment for the X-ray diffraction facility will be delivered in April. three new diffractometers will be installed temporarily in the existing facility on the third floor of the Research Wing. The facility funded by grants totaling close to \$500,000 from the NSF, the Missouri Research Board and the Center, will place the Center and the department in a strong position regarding X-ray diffraction for years to come. Two new Siemens diffractometers will be installed, one utilizing a new high-intensity rotating-anode X-ray source. A third instrument will be custom-built to make use of not only the high-intensity source, but also a closed cycle helium cryostat allowing structure determinations and other crystallographic research to be conducted in the temperature range 7-300 °K. The NMR laboratory will soon see a second major change. As indicated earlier, the room was expanded last summer to accommodate the 500 MHz Bruker ARX-500 spectrometer. It is now finally up and running and we are especially enjoying being able to observe 11B-decoupled proton spectra. We received a grant from the NSF recently which will allow us to purchase another 300 MHz spectrometer and Drs. Anderson and Wilking are in the process of visiting manufacturers. We also received funding from the Missouri Research Board which allowed us to purchase additional probes for the "old" XL-300 and also work-station to allow for off-line processing of data and to improve considerably, undergraduate student access to modern NMR spectroscopy.

Several faculty have been able to augment their laboratories through grants from the Center. They include Dr.'s O'Brien, Stine, Welsh, Chickos and others including Barton and Corey have planned

purchases of instrumentation. A polymer-characterization laboratory is planned for the new building and a proposal is currently pending with the Research Board for some equipment. A steering committee consisting of Dr.'s Feldman (chair), Barton, Fraundorf (Physics), O'Brien and Welsh oversees the center and especially the funding of requests for equipment. Another development is the addition of two personnel. In a cooperative agreement between Washington University, MacDonnell-Douglas, the Center and the departments of Chemistry and Physics, two MacDonnell-Douglas researchers will join the Center and the University as Research Professors. Dr. Ian M. Brown will be housed at UM-St. Louis and will occupy the office and laboratory of former colleague Tom Jones and Dr. Daniel Leopold will be housed at Washington University in the department of physics. Their intention is to establish research programs in conducting polymers, funded by external grants, the company and the two universities.

Finally, Congressman Clay has been helpful in writing letters to request that the process of approval of the plans for the building be expedited and we are optimistic that construction will begin before the beginning of summer.

Career Day - April 21, 1993

Another successful Career Day!! This year the St. Louis Section of the American Chemical Society and the Department of Chemistry cosponsored Career Day for High School Students as a part of Chemical Progress Week which was chaired by Dr. Kimberly Kilgore. It was held on April 21, 1993, at the UM-St. Louis campus. Approximately 225 students from area high school attended the event. Moderators were Dr. Lawrence Barton, Chairman of the Chemistry Department and Mr. Francis Botts, Monsanto Company. Once again the role models were UM-St. Louis chemistry graduates. **Jettie Travis-Bryant, B.S., 1985**, spoke on *The Chemist in Government Laboratory*. Jettie works at the FDA Division of Drug Analysis in St. Louis. **Pauline Bellavance, Ph.D., 1978**, spoke on *The Chemist in Education*. Pauline works at Fontbonne College. **Donald Hesse, Ph.D., 1990**, spoke on *The Chemist in an Analytical Laboratory*". Don is at the IT St. Louis Laboratory. **Harold Messler, B.A., 1970**, spoke on *The Chemist in a Crime Laboratory*. Harold is criminalist at St. Louis Metropolitan Police, Crime Laboratory. **Michael Washington**, Monsanto Company Environmental Sciences Center and a graduate student in our Ph.D. program spoke on *The Chemist in Environmental Research*. In addition Dr. Lee Brammer and the Chemistry Club presented a chemistry magic show.

Graduates 1993

MAY 1993

Sohrab Abdollahi, M.S.
Hong Fang, M.S.
Huzaine Hussin, B.A.
Karen A. Jansen, B.S.
Matthew W. Mahoney, B.S.
Michael Meisinger, M.S.
Estatira Razavi, B.A.
Lori Rodriguez, B.A.
Jean A. Schmidt, B.A.
Kimberly D. Story, B.A.
Michelle L. Van Hee, B.A./B.S.
Sean A. Whitt, B.A.
Chongfu Xu, M.S.

AUGUST 1993

Matthew Blum, B.S.
Timothy Desmond, B.S.
Christine Maupin, B.S.
Jeffrey Siria, Ph.D.
April Stover, B.A.

DECEMBER 1993

Greg Bertin, B.S.
Sean D. Dingman, B.S.
Jeffrey P. Donohue, M.S.
Daniel Feddersen, B.A.
Dwight Holman, B.A.
Ali Kasiri, M.S.
Kevin Koeller, Ph.D.
William Lesko, M.S.
Karen Linck, B.S.
Bryron Madkins, M.S.
John Matthai, B.A.
Eric L. Medlock, B.S.
Mark R. Rahe, M.S.
Donald Ruhl, B.A.
Steven Rooney, B.A.
Wayne Troup, B.A.
Benjamin D. Turner, B.A.

The Faculty

Gordon K. Anderson, was promoted to the rank of Full Professor in 1993. He had two Ph.D. students graduate last year and continues to work on binuclear metal complexes, funded by the National Science Foundation. Over the summer he wrote a long chapter on organoplatinum compounds for the second edition of *Comprehensive Organometallic Chemistry*. During the past year he published several research papers and a review, "Chemistry at Diplatinum Centers" in *Advances in Organometallic Chemistry*. He attended the 5th International Conference on the Chemistry of the Platinum Group Metals in St. Andrews, Scotland in July. At the end of this academic year he will pass

on the responsibility of Director of Graduate Studies to Dr Winter after 6.5 years.

Charles W. Armbruster, is in his second year of "retirement" but one would hardly know it since he continues to teach a heavy load including organic chemistry and chemistry 11. He is still very successful on the racquetball court and manages to get away most vacations to the Caribbean or somewhere similarly exotic.

Lawrence Barton, received research funding from the National Science Foundation and also from the Missouri Research Board last year. He presented papers at the *Eighth International Meeting on Boron Compounds* in Knoxville TN, this past summer and also at the Chicago ACS meeting in August 1993. He continues to work on metallaborane chemistry involving both main group and transition metals with a research group consisting of a graduate student, a postdoctoral fellow and two undergraduates. He completed a major Now that his children are grown, he and his wife Pat (B.A., 1977, B.A. 1977, M.A., 1980, History) are able to travel to Europe each summer to visit family and reacquaint themselves with their European heritage.

Lee Brammer has published papers recently in Inorganic Chemistry and Organometallics co-authored with postdoc, Dong Zhao, describing work on transition metal-hydrogen interactions. He and his research group gave presentations at the meeting of the American Crystallographic Association and the American chemical Society, and at the Organometallics Gordon Conference during the past year. Dr. Brammer has also presented seminars at Washington University, Southwest Missouri State University and the University of Illinois-Chicago in recent weeks. He has been very busy planning for the new X-ray diffraction facility. He was instrumental in writing the proposal to the NSF which will bring a new diffractometer to the department and he received a Missouri Research Board grant this past year. He was also recently asked by the American crystallography Association to consider the possibility of hosting the 1997 annual meeting in St. Louis and serving as the local chair.

James S. Chickos, returned from a productive sabbatical year in Marseilles, Fr., and Reading, UK, last summer. Jim has a research group containing two graduate students a third, Bradley Hart, who graduates this May, recently took up a postdoc position at the University of Georgia. Dr. Chickos had some onerous committee work this year. His committee was involved in setting up international exchange programs and he was one those who traveled to Britain and Spain to make arrangements.

Joyce Y. Corey continues her research in organosilicon chemistry. She recently added a postdoc to her group which also includes three graduate students and undergraduate. Dr. Corey and her graduate students recently returned from a trip to the biannual Organosilicon Chemistry Conference which was held in Troy, NY. This past summer she was one of seven US chemists to be invited to speak at the *International Conference on Organosilicon Chemistry*, in Poznan, Poland.

Valerian T. D'Souza was awarded tenure and promoted to Associate Professor this past year. He received a grant from the Petroleum Research Fund of the American Chemical Society last year and another from the Missouri Research Board. He also has several small grants from industry. Last August he attended the *34th International Union of Pure and Applied Chemistry Conference* at Shan-Xi University, Beijing, China, where he presented a paper on his research. Dr. D'Souza again serves at Faculty advisor to the ACS Student Affiliates and they have been very active this year.

David L. Garin now has three graduate students and at least two undergraduates in his research group. He appeared on a panel *Science and the Media* last April at the St. Louis Science Center when notables including ACS President Helen Free participated. Dr. Garin serves on the St. Louis Critical Technologies Task Force, *Energy and the Environment*. Last summer his administrative title changed to *Director of the Center for Science and Technology*. Dave attended the San Diego ACS meeting and had a few beers with Floris Homan (B.S., 1985, Ph.D., 1989). Floris claims to have solved an industrial problem by remembering and utilizing a decarboxylation reaction from his thesis.

Harold H. Harris is chairman of the of the St. Louis Section of the American Chemical Society. Dr. Harris is assuming the role of training student teachers of chemistry and physics and next year his appointment will be a joint one between the Chemistry Department and the School of Education. Associated with these new responsibilities, he is presenting a workshop this month for teachers at the national NSTA (National Science Teachers Association) meeting in Anaheim, California and a local workshop on the use of toys to teach chemistry. He continues to be chairman of the Honors Division judges at the Monsanto-Post Dispatch Science Fair, a responsibility he has held for more than fifteen years. Dr. Harris has established a unique archive of data about chemistry textbooks, for the chemical education community. Accessible through the department Gopher, the archive is supported by donations from publishers of chemistry textbooks, and it lists books available for adoption throughout the curriculum, from introductory through graduate level courses. Several UMSL undergraduates work on the project, finding both textbooks and citations of their reviews for the archive. Although it is

has been in existence only a few months, the archive contains over three hundred current textbooks, and is accessed by hundreds of users each week, from around the world. He continues his research program and recently picked up a graduate student. He and an undergraduate will have a paper come out this fall on "Electrical Perturbation of Cellular Premixed Propane/Air Flames" in the journal *Combustion and Flame*. and he is recently presented a seminar on the same subject.

Wesley R. Harris recently spoke in a special symposium held in honor of Professor Ken Raymond the winner of the ACS award in Bioinorganic Chemistry at the ACS meeting in San Diego. Dr. Harris received a \$518K, four-year grant from the NIH last year to support his work on the mechanism of iron removal from Serum Transferrin, the iron-binding protein. Dr. Harris and his students presented papers at the ACS Meeting in Chicago, last August and the ACS Midwest Regional Meeting in Columbia, MO. in November.

David W. Larsen continues his studies to develop methods for the treatment of hazardous waste. He published several papers this past year on the subject with his collaborator, Stan Manahan of UM-Columbia and they have spent much time developing contacts and leads for the possible major development of their method, the *Chem Char Process*. Dr. Larsen received a grant from Mallinckrodt last year.

Jane A. Miller, although retired has emeritus status as she continues to write on the history of chemistry. She recently published biographies of Ruth Benerito, Gerty Cori and Erika Cremer in *Women in chemistry and Physics - A Bibliographic Sourcebook*, published by Greenwood Press, and Paul Karrer and Richard Kuhn in *Nobel Laureates in Chemistry*, published by the ACS. Hailing from New Orleans, Dr. Miller is well-known for her culinary skills and she demonstrated them recently when she held an open house to celebrate Mardi Gras.

Robert W. Murray received the final year funding of his \$602K five-year award from the National Institutes of Health. Earlier this academic year he heard that his NIH MERIT award had been extended for an additional five years. He also has research support from the Pulp and Paper Research Institute of Canada (PAPRICAN). Recently Dr. Murray was awarded the 1993 *I.H. Weldon Medal* from PAPRICAN, awarded on the basis of a paper he published on the use of activated oxygen in the bleaching of paper pulp. Next year Dr. Murray will assume a non-classroom teaching role in the department but he is as active and productive as ever in his research program.

James J. O'Brien suffered a mild stroke last June and took the semester off on a medical leave but he is back

in the department teaching instrumental analysis and conducting his research on intra-cavity laser spectroscopy. Dr. O'Brien added two postdocs to his group last year and between the three of them they have almost completely filled their lab with complex apparatus. Dr. O'Brien was funded by Monsanto for work on diamond-like films but the company sold the business so the support ended. Fortunately Dr. O'Brien received one half of the department Monsanto postdoc. funding which along with an internal grant from the university will allow continuation of the research. His other major area of research, high resolution absorption spectra of methane under planetary atmosphere conditions, and supported by NASA continues. He and his postdoc Kuldeep Singh have a paper appearing shortly in the *Journal of Quantitative Spectroscopy and Radioactive Transfer*.

Nigam P. Rath continues to ensure that we have a very productive X-ray facility and he has been busy working with Professor Brammer in planning the new facility. He recently returned from a trip to his native India and most recently was at the Pittsburgh Conference learning about new hardware and software package for structure solution.

Christopher D. Spilling has just completed a productive fifth year at UM-St. Louis. His first Ph.D. student, Kevin Koeller, graduated in December and is now a postdoc at the University of Nebraska with Professor James Takacs. Chris presented several invited lectures this past year at such places as Kansas State University, the University of Kansas, Southeast Missouri State University, Michigan Technological University and Missouri Organic Day and has published several research papers. He continues to direct the Summer Undergraduate Research Program, which is now in its third year of funding from the NSF. He is one of the many organic chemists around the world to be invited to contribute to the *Encyclopedia of Organic Reagents* to be published later this year.

Keith J. Stine continues his research on monolayers with the aid of a graduate student and the help of a postdoctoral associate. He attended the Gordon Conference in Ventura, CA and presented a poster on the work, which has resulted in 6 research publications. the most recent papers appeared in *Chemistry and Physics of Lipids* and *Microscopy Research and Technique*. He has acquired additional equipment which is being set up for studies of monolayers on metal surfaces and will soon be in operation. A new project involving amphiphilic cyclodextrins is being planned for a graduate student working jointly with Dr. D'Souza.

William J. Welsh received much publicity recently as a result of his being a member of a team which

received a \$950K grant from the US Air Force. Reports appeared in the St. Louis Post-Dispatch, and several other area and campus media. The grant is for the development of deicing materials based on so-called antifreeze proteins used by certain Arctic mammals. Dr. Welsh organized and chaired a symposium on Frontiers in Applications of Computational chemistry at the ACS Midwest Regional Meeting in Columbia MO last fall and also gave a symposium lecture at the ACS Meeting in San Diego. His research group which consists of a postdoc, three graduate students and several undergraduates await the construction of the Center for Molecular Electronics building. they are quite short of space now but they will have a nice new facility once the building is finished.

Rudolph E.K. Winter continues to teach organic chemistry laboratory and various upper -level organic chemistry courses. He published papers last year in the *Journal of Natural Products* and *Acta Crystallographica* and continues his collaborative research with Walter Lewis of the Department of Botany at Washington University. They recently submitted a joint patent on A Novel wound-Healing Composition. Dr. Winter's research group now consists of three graduates students and an undergraduate.

New Faculty

Janet Braddock-Wilking joined us last fall as research assistant professor and NMR specialist. Janet received a B.A., degree in 1985 and then went to Washington University where she completed a Ph.D. degree with Professor Gaspar. During the 1990-91 academic year she was at Harvard University doing postdoctoral research with Professor Andrew Barron and she followed that as a postdoctoral fellow at Mallinckrodt Medical Inc. Janet is a St. Louisan and many of us remember her working in the stockroom with Jim Wheatley when she was an undergraduate here. Janet is married to Professor Bruce Wilking in our department of Physics. She arrived here as the Bruker spectrometer was being installed. She is busy working on setting parameters for the new instrument and traveling to visit instrument manufacturers as we plan the purchase of the new 300 MHz spectrometer. She hopes to be able, eventually, to do some independent research once the new NMR facility is running smoothly and to that end she has submitted a research planning grant to the National Science Foundation. here.

Dr. Zhi Xu will join us in the fall. He received a B.S. in chemistry degree and a M.S. in electrical engineering from Tsinghua University in Beijing, P.R. China. He came to the U.S. in 1985 and completed his Ph.D. degree from the University of Pittsburgh with

Professor John Yates in surface science. He is currently doing postdoctoral research at the University of Illinois-Champaign-Urbana with Professor Paul Bohn. his research interests are in the molecular engineering of new optoelectronic materials. We expect Dr. Xu to join us sometime in July.

Adjunct Faculty

Daniel Connolly continues to teach biochemistry in the evenings. Enrollment in his courses has increased as the number of students returning to accumulate credits prior to application to medical school increases. Dan was promoted last year to Adjunct Associate Professor

Donna Friedman (Ph.D., UM-St. Louis 1981) has taught quantitative analysis during the summer these past several years. Last Fall Donna accepted the ACS Award for Outstanding Performance by a Large Section, on behalf of the St. Louis Section of the ACS as chair of the Section during the year for which the award was presented, and last year she was elected to be the first ever woman Councilor for the Section..

John Gutweiler is well into his third decade of teaching part-time in the department. He is the inveterate Cardinal fan and is very disturbed about the status of the pitching staff for the upcoming season.

Dennis Moore continues to teach general chemistry in the evenings and we understand that he really enjoys it. We are pleased to be able to use his talents for both semesters next year. During his first three years here he taught only in the Winter semesters

William Neumann (Ph.D. 1987) last year taught the largest section of organic chemistry in the department. Indeed we had to divide the course this semester. Bill, who works at Monsanto, gave the 1993 Alumni Lecture at the Annual Aads Function. It was entitled: "The Asymmetric Synthesis of Highly Functionalized Polyazamacrocycles: Applications to Synthetic Metalloenzyme Mimics".

Robert Orth will continue to teach physical chemistry next fall. Due to the pressure of work, he had to do substantial traveling this semester which precluded his teaching.

Raghavan Rajagopalan joined us as an Adjunct Assistant Professor when it was clear that the section of Chemistry 261 which Bill Neumann was to teach would be too large for one person. Raghavan received a B.S. at SUNY-Stony Brook and his Ph.D. degree at Columbia University with Ronald Breslow. He is a research chemist with Mallinckrodt Medical Inc. in St. Louis and we understand he is enjoying the new experience.

William Ridley is splitting the teaching of Advanced Biochemistry with Dan Connolly this year. In the fall he teaches biochemistry for the School of Optometry. Wil presented a paper at the ACS meeting in San Diego in March.

Robert Stearns has the largest section of chemistry 12 that he has ever had this semester. This trend of increasing enrollment in the evening appears to be widespread across our curriculum. Poor Bob has been fighting an attack of Bell's Palsy this semester but he hasn't missed a class in spite of the obvious discomfort he is experiencing.

The Staff

Betty Eshbaugh ???

Bob Cabaniss had surgery for a tumor on his lung in January. He had a difficult time but is doing very well now. At this time he is still in Christain Northeast Hospital but he is rapidly improving and expects to go home in a couple of weeks.

Lisa Johnson new, writes poetry,

Gordon Kirschmann new

Joe Krammer computers

Donna Palmer chemistry major

Randa Schneider ???

Ted Windsor Vintage cars

Postdoctoral Fellows

Jonathan Bould, works with Professor Barton. He received his BSc degree at the University of Bath and his Ph.D. degree at Leeds University, both in England. Jonathan is a world traveller and a licensed commercial hot-air balloon pilot.

Yiwei Ding, works with Professor Corey. He received his Ph.D. degree at Iowa State University with Professor Tom Barton. He visited the department over the Christmas vacation with Alan Schneider, B.S., 1987, with whom he studied at Iowa State in the (Tom) Barton group.

K. Iyanar continues to work with Professor Murray on a project funded by the Pulp and Paper Research Institute of Canada.

Magnus Lipp works with Professor O'Brien and is starting his second year working on the formation of diamond-like carbon films.

Megh Singh continues to work with Professor Murray as a senior postdoc. His appointment is Research Assistant Professor.

Kuldip Singh works with Professor O'Brien on the analysis of methane spectra under planetary atmosphere conditions. He is completing his first year with Dr. O'Brien.

Sam Tersigni and Wangkan Lin are both employed by Ethyl Petroleum Additives Division but still continue to work with Professor Welsh in the evenings. That will not last, however as the company is relocating to Virginia later this year.

Jack Uang works with Professor Stine after working in Professor Chickos lab for a couple of years. He and Dr. Stine have been busy publishing papers on their monolayer research.

Tong Weida, now works with Professor Welsh after working with Professor D'Souza for two years. He is currently modeling the "anti-freeze protein" for which Dr. Welsh recently received a major USAF grant.

Dong Zhao is entering his third year at UM-St. Louis under the direction Professor Brammer. His work continues on structural and spectroscopic studies of compounds with unusual hydrogen bonds formed directly to transition metal centers.

Support

This has been an excellent year in terms of the financial support received from alumni. We are extremely grateful for that and herein we describe how we have and will use those funds. We maintain several accounts which are used to support students in a range of ways. These include the Alumni Gift Account which we use to fund Freshman Scholarships, Summer Graduate Fellowships, alumni functions, printing, mailing etc., the Brunngraber and related accounts which contain funds for undergraduate research fellowships, and the Award Account which funds the Alan F. Berndt Senior Outstanding Senior Award, the Monsanto Aid to Education Funds and provides expenses for the other undergraduate awards, student travel to meetings and other similar expenditures for which we have no alternative funding. In addition we maintain accounts into which the funds contributed by Ronald Harris and Robert Lamberg are placed. These funds are used to finance the Fellowships named after the donors. Another important use to which we have put alumni contributions in recent years is the Chemistry Tutoring Lab. This is staffed by undergraduates, some who are paid an hourly rate and who help administer the program and others who volunteer their services.

These programs depend on you for such support. We are also very concerned that you support us in other ways. As voters you can help improve the level of funding for higher education in Missouri. As

colleagues in industry you have assisted us in improving our standing with corporate management and as members of the community you can help improve our image there by being successful and letting your neighbors know where you received your degree(s). Many of you have steered surplus and other equipment in our direction; others have encouraged colleagues to return for graduate work here or to send their children here. We appreciate all of this and look forward to closer interactions with you in the future. As our program develops and our reputation grows your degrees become more valuable than ever so it is in all our interests to help the institution.

If you decide to make a contribution, please do so by using the tear off sheet at the end. If you wish your contribution to be used in one of the areas described above, please indicate that on the form. Even if you are unable to make a contribution please complete the "Information Update". Information about your successes is **extremely** important to us.

Contributions 1992-93

Below we list all the chemistry alumni who made contributions to the university last year. The list includes those whose contributions went into general accounts in addition to those which went into the chemistry account, and it also includes those who made payments as part of larger pledges. The list is very impressive and we are most grateful for your support, especially during these very difficult times. There are some names included who are alumni of other departments but who returned to UM-St. Louis to take the prerequisite chemistry courses prior to applying to medical school. the listing may not be up-to-date since many of you have made contributions quite recently. If we missed out your name, we apologize and hope you understand that this newsletter is written by an amateur who does it in his spare time.

ALUMNI CONTRIBUTIONS

Major and Mrs. David A. Armbruster
Mr. and Mrs. Kevin O. Aubuchon
Mr. and Mrs. Michael C. Auinbauh
Dr. and Mrs. Ali A. Bazzi
Dr. and Mrs. David L. Beach
Mr. and Mrs. Thomas C. Bedard
Ms. Phyllis R. Bennet
Mr. and Mrs. Wayne R. Bergstrom
Dr. John Bookstaver
Mr. and Mrs. Edward M. Bovier
Mr. and Mrs. Joseph W. Bulock
Mr. and Mrs. Thomas J. Byrd
Mr. Charles Calvert
Dr. Kathleen Cammack
Ms. Catherine Carr
Dr. John J. Chaber
Ms. Patricia G. Clay
Mr. Michael M. Crowley
Mr. Jack Dougherty
Dr. Jodie Duke
Mr. and Mrs. James F. Essinger, Jr.
Drs. Kathy and Steve Fallis
Mr. and Mrs. Michael J. Finkes
Mr. James French

Ms. Elizabeth D. Viviano-Galie
Mr. and Mrs. Lee L. Gori
Mr. and Mrs. James K. Grant
Drs. Dorothy C. and Alfred O. Greco
Mr. and Mrs. Stephen P. Harris
Mr. Ronald B. Harris
Mr. and Mrs. Steven J. Harrison
Mr. Richard E. Hauhart
Ms. Mary K. Hays
Mr. Lance Hellwig
Mr. Kenneth Henderson
Dr. Don Hesse
Mr. Gary Henley
Mr. and Mrs. Andrew Hilliker
Dr. and Mrs. Gary S. Jacob
Mr. and Mrs. Larry A. Justice
Dr. Thomas C. Kuechler
Dr. and Mrs. Mark A. Knollman
Mr. Tommie J. Lakes
Dr. Robert Lamberg
Mr. and Mrs. Mark A. Leiber
Dr. and Mrs. Minren Lin
Mr. and Mrs. Raymond E. Logsdon, Jr.
Dr. Gregg J. Lumetta
Mr. Tom Makara
Mr. Kevin G. Mallon
Mr. and Mrs. Martin P. Mantler
Mr. and Mrs. Steven J. Mertens
Mr. Thomas J. Mertle
Mr. Richard Morphing
Dr. Richard G. Mrad
Mr. Robert J. Olsen
Mr. and Mrs. Donald O'Neal
Dr. and Mrs. Dennis R. Patterson
Mr. Larry Payette
Mr. John Phipps
Mr. Michael A. and Dr. Janet D. Place
Mr. and Mrs. Gregory W. Przygoda
Mr. and Mrs. Randall H. Quint
Dr. Shankar B. Rananavare
Dr. Andrew L. Ratermann
Mr. Clinton Reed
Dr. Terry L. Renken
Mr. and Mrs. Philip Rexroat
Mr. and Mrs. Thomas E. Rifleman
Mr. and Mrs. Bruce E. Ritts
Dr. and Mrs. Jeffrey A. Ronecker
Mr. and Mrs. John E. Rose
Roy
Mr. and Mrs. John W. Ruggeri
Dr. Susan Saum
Mr. and Mrs. Michael S. Severance
Drs. William R. and Dawn L. Shiang
Drs. Xue M. Gu and Judy Shih
Dr. and Mrs. Jeffrey W. Siria
Dr. and Mrs. R. Thomas Solsten, Jr.
Dr. Barbara A. Soltz
Mr. and Mrs. Leslie M. Sprinkle
Mr. Steven Staat
Mr. Douglas Stracke

Mr. Daniel P. Stueck
Mr. John Thompson
Mr. and Mrs. Dan C. Tucker
Mr. Angelo W. Vangel, Jr.
Mr. R. Keith Webber
Mr. and Mrs. Michael J. Welsch
Dr. Denis W. Wester
Mr. and Mrs. Mark R. Williams
Mr. and Mrs. Tianhe Zhu

NON ALUMNI

Dr. Madelon T. Price
Mr. Ronald Harris

COMPANY/ORGANIZATION/FOUNDATION

Anheuser-Busch Foundation
Aristech Foundation
Autodesk, Inc.
The Boeing Company
Dow U.S.A.
G.D. Searle & Company Charitable Trust
IBM Corporation
Mallinckrodt Medical, Inc.
Mallinckrodt Specialty Chemicals Company
McDonnell-Douglas Foundation
Monsanto Agricultural Company
Monsanto Company
Monsanto Fund
Mosby
National Medical Enterprises, Inc.
The Prudential Foundation
Ralston Purina Company
Southwestern Bell Foundation
UM-St. Louis Alumni Association
The Upjohn Company
Mr. and Mrs. Robert J. Watson

ALUMNI AGENTS

A special group of alumni are the Alumni Agents. These are individuals who make a commitment to contribute at a certain level and also to recruit other chemistry alumni to join them. These are the *Alumni Agents* and the chemists are very well represented among this group. There is no other departmental major with more members of the Alumni Agents group than the chemists. Listed among the Alumni Agents are:

Phyllis Bennet, (M.S., 1979)
Michael J. Finkes, (B.S., 1973; M.S. 1978)
James K. Grant, (M.S., 1982)
Dorothy Greco, (B.S., 1971)
Lloyd P. Hill, (B.S., 1967)
Robert L. Lamberg, (B.S., 1972)
Richard G. Mrad, (B.A., 1981)
Gregory W. Przygoda, (B.A., 1973)

Departmental Awards

Undergraduate

The award for the *Outstanding Student in Introductory Chemistry* was **Jennifer Renshaw**. She received a certificate and a Handbook of Chemistry and Physics from the Chemical Rubber Company. The *American Chemical Society for analytical Chemistry* went to **Gregory Bertin**. Gregory received a certificate and a one-year subscription to *Analytical Chemistry*. The *American Chemical Society - St. Louis Section's Outstanding Junior Award* went to **Sean Dingman**. The award was presented at the annual Awards Night during the ACS St. Louis Section's Chemical Progress Week. **Jean Schmidt and Lori Rodriguez** received the *Alan F. Berndt Outstanding Senior Award*. **Dennis Kraichely** received the *Eric G. Brunngaber Fellowship for 1993-94* academic year. The *William and Erma Cooke Scholarship for 1993-94* went to **Courtney Aldrich**. The *1993 Undergraduate Chemistry Awards sponsored by the Monsanto Company* went to: **Courtney Aldrich, Sean Dingman, Mark Elking, Michael Kennedy, Dennis Kraichely, Karen Linck, Andre Odijk, Elizabeth Sloan, and Shadonna Tansil**.

Graduate

The *1993-94 Mallinckrodt Fellowship* went to **Hong Fang**. Hong works with Professor Barton. The *Alumni Summer Graduate Fellowship* went to **Yu Lin and Shengping Tian** who work for Professors Welsh and D'Souza respectively. The *Graduate School Summer Fellowship* was awarded to **Abdul Kahn and Graduate School Dissertation Fellowships went to Kevin Koeller and Cecilia Marzabadi**. Abdul works for Dr. D'Souza and the latter two worked with Dr. Spilling. The *Outstanding M.S. Student* went to **John Johnson**. **Isabelle Vasconcelos** and **Jean Huhmann** received the *Teaching Assistant Commendations*.

Alumni

The *Sixth Annual Distinguished Alumni Lecture* was presented by **Dr. William Neumann**, Ph.D. 1988.

