



UMSL CHEMIST

Department of Chemistry

University of Missouri-St. Louis

Volume 9

March 1991

Chairman's Message

We continue to receive very nice comments about the UMSL CHEMIST, and that makes it an added pleasure to include my comments in this, our 9th volume in the new format.

This has been another year of change for the department and the campus. Marguerite Ross Barnett has left to become President of the University of Houston, and Tom Jones has also left to become her Deputy. We had a very nice reception for Tom in December just prior to his leaving. He is formally on a leave of absence but that is only to allow him to continue an ongoing funded research program here. Dr. Jones still has a postdoc working in his lab. The campus is near the end of the formal search for a new chancellor and we expect the announcement to come any day now.

Dr. Blanche Touhill, Vice-Chancellor for Academic Affairs, is currently serving as Interim Chancellor. Perhaps her greatest achievement in her short tenure was that she was instrumental in finally bringing

an engineering program to the campus. Our Engineering Center is run jointly with the University of Missouri-Rolla. The Center now offers the Graduate Programs, formerly administered



by the UM-Rolla Extension Division. The Undergraduate Program will be initiated when funding is made available. The campus has already raised over \$1 million in matching funds for the latter, with much of this coming from the McDonnell-Douglas Corporation. Dr. Touhill has also negotiated the initiation of planning for several new graduate programs and continues the various partnership programs established during Marguerite Barnett's term. The campus was recently honored by re-

ceipt of the *Anderson Medal*, for the Bridge and related programs aimed at assisting the city schools at all levels. The *Anderson Medal* is a highly competitive national award.

In mid March, the ground-breaking ceremony will take place for the new Computer Science Building and Computer Center. The Mark Twain Building (the gymnasium) has recently been substantially renovated.

The latter looked very good when the Saint Louis Symphony presented a concert on March 1. This was part of the program of community performances which



replaced the Orchestra's European Tour, cancelled because of the war in the Middle East. The St. Louis rapid transit system is under construction and work is currently in progress on the campus. The light rail system, *Metrolink*, runs from East St. Louis through downtown, along the edge of Forest Park and across to the airport via the UM-St. Louis campus. There will be two stations on the campus and we expect that it will significantly improve access to the university.

The department continues to grow and develop. We are pleased to report that involvement in undergraduate research by our students is on the increase, and enrollment is up again after two years of steady decline. This year marks the 25th anniversary of the first graduating class and the numbers of graduates are impressive. Also this year we graduated our 550th bachelor's graduate, our 77th master's degree graduate and the 40th Ph.D. in chemistry. In addition there is a growing number of graduates who minored in chemistry. The successes of graduates are astounding and news of them provides the best possible recognition that a professor could receive. On the other hand, we were very shocked to hear that Larry Kaempfe had passed away. Some comments about this are given later.

Our facilities are not improving to the extent they were last year when we had recently moved into the new building, but they are improving and are described elsewhere. The Chemistry Colloquium Room is almost complete and we hope to inaugurate it either at the *Annual Distinguished Alumni Lecture* (which is also the departmental Awards Ceremony), or the ACS St. Louis Section Award Symposium. We are pleased to acknowledge major support from Anheuser-Busch for this project and additional support from Emerson Electric.

Chemistry faculty have received various honors this past year. Of particular note: Dr. Murray received the *UM Presidential Award for Research and Creativity*; Lee Brammer received the *Sidhu Medal* from the Pittsburgh Diffraction Society for outstanding performance by a scientist under the age of 33; while yours truly was flattered to receive the Alumni Association's *Faculty Service Award* in 1990 and, more recently, to be named the ACS St. Louis Section Awardee for 1991.

The funding picture looks bleak for all of us in the near future and thus we are in the process of tightening our belts. We hear that students' fees will be increased by 12.5% this year, faculty and staff will not receive a salary increase and the campus is making plans for a reduction in the total budget. Our external fund-raising efforts have seen some success. We particularly appreciate the contributions made by alumni and these funds are all being turned into student awards of some type. They are described below. External grant funding is particularly tight these days but our annual total continues to creep up. We topped \$0.5 million again this past year and industrial research support represents a larger share. We are very pleased that the partnerships with the local chemical industry that we described last year continue and that we are establishing new ones. Drs. O'Brien and Wesley Harris have developed new programs with the Monsanto Company and our expanding inter-action with the Mallinckrodt Company continues.

We did not hold an Alumni Reception last year but we plan to do so this year on April 12 in the Alumni Center. You will all receive announcements about this event soon. We also hope you will be able to attend the Annual Distinguished Alumni Lecture and Awards Ceremony on April 9. The Lecturer has not yet been named.

Please keep in touch with us and inform us of your successes. It is very important to us that you do well. You are our "products" and we are certainly very proud when we hear of your achievements. Also if you have job openings, please let me know so that if others among you

are seeking employment, we may be able to help you. But we can only do this if you contact us.

We wish you all the very best in your careers and in your personal lives, and we hope to see many of you on April 12.

Sincerely,



Lawrence Barton

Professor and Chairman

LARRY A. KAEMPFE 1948-1990

Larry A. Kaempfe, passed away just before Christmas last year. Larry received his B.S. degree in chemistry in 1973 having originally enrolled at UM-St. Louis in 1965. We only heard of this tragedy recently. Larry was known in his undergraduate days here as an exceptional synthetic chemist. He worked in the laboratory of Professor Ken Barnett on some organo-nickel chemistry and also with Professors Garin, Barnett, and then-graduate student Dave Beach (Ph.D. 1977), on some rhodium-catalysed organic ring opening reactions.

He went to Monsanto after graduation and worked there for 17 years until his death. He worked in the research group of Dr. Jordan Bloomfield, well known to UM-St. Louis students and faculty, and with Dr. Dennis Owsley, also a former adjunct faculty member and now a part-time star with KWMU and a Monsanto Research Fellow. He transferred from Corporate Research to the Monsanto Chemical Company in 1977 and to the Animal Sciences Division of the Agricultural Company in 1982.

Larry returned to UM-St. Louis in 1975 and completed a part-time M.S. degree in 1978. He was thus a member of the second M.S. level graduating class. In recent years at Monsanto his position was Research Specialist and he was involved in solid phase peptide synthesis and much large scale preparative chromatography.

He will be missed. Larry was a good friend of the chemistry department having helped us in several ways over the years and he was a good personal friend to many of the faculty and former students.

1967-68

Gary Henrich, B.S., received his M.S. degree in Biochemistry from Vanderbilt University in 1970 and later graduated from the Graduate School of Columbia Bible College. He taught at Toccoa Falls College for several years. He is now employed by the Gideons International, Nashville, TN, as Editorial Supervisor.

1968-69

Gary Perryman, B.S., is an Analytical Chemist at the U.S. Environmental Protection Agency in Littleton, Colorado.

Joseph Bono, B.S., is a Senior Forensic Chemist at the Drug Enforcement Administration in Washington, D.C. He recently presented two papers at the American Academy of Forensic Sciences meeting in Cincinnati. Currently he is involved in developing methods of forensic analysis utilizing NMR spectrometry. Joe resides in the Washington, D.C., area with his wife, Barbara, and their 3 children, Gina (16), Matthew (15), and Daniel (10). After eight years of living in many interesting places, he feels very much at home in the nation's Capital, and hopes to be there a long time. This editor had lunch with Joe when he attended the Fall 1990 ACS meeting in D.C.

Gary Jacob, B.S., was last year appointed a *Monsanto Fellow* by Dr. Howard Schneiderman, then Senior Vice President and Chief Chemist, at Monsanto in St. Louis. Gary completed a Ph.D. degree in biochemistry at the University of Wisconsin-Madison in 1976 and then worked at the IBM Watson Research Center as a postdoc for three years prior to joining the Monsanto Company in 1979. His work at Monsanto centered on the applications of nuclear magnetic resonance spectroscopy to biological systems, and in 1986 his company sent him to Oxford University to head a research program involving Searle, Monsanto and Oxford University. Since then his work has been in the area of glycoenzymology and among his accomplishments is work on the possible AIDS compound SC48334. The Monsanto Fellow award is the first accorded to a UM-St. Louis alumnus. Gary returned to St. Louis in 1990 to continue his work at the Creve Coeur location of Monsanto.

1969-70

Gene T. Bohn, B.S., is now Plant Engineering Manager at Alcoa Building Products in South Bend, IN. He is responsible for all technical manufacturing aspects and has plant engineering, maintenance, and plant R. & D. reporting to him. He and his wife have three children, two

boys in third and eleventh grade and a daughter in eighth grade.

Harold Messler, B.S., presented the *Third Annual Distinguished Alumni Lecture* at the department Awards Ceremony on April 30. The talk was entitled "Forensic Chemistry" and it was very well received.

1970-71

Louis F. Crepps, M.D., B.S., is a Staff Radiologist, St. John's Medical Center in St. Louis, Missouri. He is also a staff member of the West County Radiological Group, Inc.

Dorothy (Cook) Greco, B.S., is active in the Alumni Agents Program and we enjoyed meeting her and her husband Al (B.A., Biology 1971) at the annual meeting in June 1990. Dorothy works with Healthlink and she and Al are busy raising their family of four children.

Michael W. Young, B.S., is employed by BASF Corp. Rensselaer, NY, as operations manager. He is responsible for all production and development laboratory on site where they manufacture dyestuffs and ultraviolet light absorbers.

Dennis W. Wester, B.S., will be in St. Louis in April as one of the speakers in the ACS St. Louis Award Symposium. Dennis, who received his Ph.D. from the University of Florida, and did post-doctoral research at Ohio State University, is now a Senior Research Scientist at the Battelle Pacific Northwest Laboratory. In his spare time, Dennis translates from Russian into English for Consultants Bureau.

1971-72

Robert Lamberg, B.S., is another active member of the Alumni Agents Program. Bob recently agreed to fund an undergraduate fellowship in the department (for more details, see below).

Roger Riemann, B.S., recently sent us some information on a new element he had discovered - Administration. Roger is with Digital Equipment Co. in St. Louis and we are not sure how he came to make this outstanding discovery.

1972-73

Michael Finkes, B.S., (M.S. 1978), was promoted to Research Specialist at Monsanto Agricultural Company in the New Products Division. His new responsibilities include the implementation of a Good Laboratory Practice program into the division. We bumped into Mike

in November at the Clayton Radisson Hotel where he was chairing his 25th high school reunion celebration with his wife Linda.

1973-74

David A. Armbruster, B.S., is employed by U.S.A.F., and is Chief of the Clinical Chemistry Division, Epidemiology Branch, at Brooks Air Force Base, in Texas. Dave was selected for the NIDA drug inspector program and also has been presenting workshops on cholesterol and lipid testing and testing for drugs of abuse. He and his wife Pat (see below), have two children, Geoff, and Gwen, 14 and 12.

Patricia Armbruster, B.S., works for Judson ISD, as a chemistry and physical science teacher. Pat returned to college in December, 1989 (after 15 years of homemaking) for her Texas secondary teaching certificate.

Steven R. Staat, B.S., is Technical Director at Controlled Rubber Inc. in Holland, Michigan. His current position involves responsibility for all polymer products and for QC plant checks and raw material testing. He says that rubber testing is very different from the chemistry he did as an undergraduate at UM-St. Louis, and a lot dirtier!

1974-75

Steven N. Hacker, B.A., works at Monsanto Company in Contonment, Florida, as an Industrial Hygiene specialist. He recently became board certified by the American Industrial Hygiene Association. He has overall responsibility for the industrial hygiene program for Monsanto's largest plant (2200 employees).

1975-76

Thomas Byrd, B.S., who has been with Mallinckrodt, Inc. for several years, was recently named Certified Hazardous Materials Manager for the company. Tom was in attendance at the recent reception for UM-St. Louis alumni who are employees of Mallinckrodt.

Robert Dittrich, B.S., is an analytical chemist at Ralston Purina. Bob has been very helpful to us recently in steering surplus equipment our way. Bob recently attended our Industrial Advisory Council meeting and has agreed to help in this group.

James J. Grib, B.S., (M.S., 1982) was promoted to Director, International Quality Assurance, for Anheuser-Busch Inc. Jim attended the recent Industrial Advisory Council.

1976-77

David Beach, Ph.D., was seen at the ACS meeting in Boston in the Spring of 1990. He was co-chair of a session at the symposium "New Science in Homogeneous Transition Metal Catalyzed Reactions". Dave is with Chevron Research in Houston, Texas. He was the first Ph.D. recipient in the department.

D. Steven Lambert, B.A., is an accounts manager for the Hewlett-Packard Company and lives in Basingstoke, Hampshire, England. Steve received an M.B.A. in management information systems from NYU in 1988. He started with Sigma Chemical Company in 1977, and after one year he moved to Lever Brothers in Pagedale, MO. He was with the company for 10 years, moving to New York after 5 years, and now he and his wife enjoy living in the beautiful English countryside.

1977-78

William VanArsdale, B.S., (Ph.D., 1984) is now with the Rohm and Haas Company in Houston, Texas. His colleagues include Rajiv Banavali (Ph.D., 1985) and Sudhir Agarwal, a former postdoc in Dr. Murray's laboratory. Bill had been on the faculty at the University of Houston-Clear Lake for several years.

1978-79

George Limpert, B.A., has been with Mallinckrodt Inc., for many years and he recently returned to continue his chemistry education. He is currently in the M.S. program and recently introduced us to his small son who appears to be very knowledgeable about chemistry.

John J. Taylor, B.A., is a Research Associate at Mallinckrodt in St. Louis in the Narcotics Research and Development Group.

1979-80

Deborah Bergstrom, B.S., continues at Dow Corning and recently had lunch with Dr. Joyce Corey when she visited the company to present a seminar.

1980-81

Fasihullah Qazi, M.S., received his Ph.D. degree in Pharmaceutical Chemistry in 1988 from the University of Karachi, Pakistan. He is now living in Houston.

Michael Drain, B.S., a Postdoctoral Associate at the Rockefeller University in New York City, has just accepted a tenure track position at the Institute Louis

Pasteur in Strasburg, France. He was recruited by Nobel Laureate Professor Jean-Marie Lehn.

Marie (Militello) Davies, B.A., is now self-employed and running a bed and breakfast house in the Soulard area. She is also busy raising a family.

Roger Morgan, B.A., is manager of a restaurant in Bethalto, Illinois. He spent time at Sigma Chemical Co. and also in chemical sales prior to taking up his present position. We bumped into him at a recent Blues hockey game.

Dennis Parazak, B.S., (M.S. 1987) continues to send us reprints of his published research in polymer chemistry. Dennis has been at Petrolite since graduation.

Alan (Greg) Wall, (B.S., 1974, M.S., 1981) was honored as "Scientist" at the Sigma Chemical Company Awards Night. This is the top honor that Sigma has for its researcher workers. Greg is a chemist in the Research Technical Service Department at Sigma and serves on our Industrial Advisory Council.

1981-82

Mary Hayes, B.A., was at the Spring 1990 ACS meeting in Boston. Mary, who received her Ph.D. degree in inorganic chemistry from Washington University, and did postdoctoral work at the University of Rochester, is still with Anistech in Pittsburgh.

Steven L. Lawrence, B.A., recently wrote to us to describe his work in the chemistry department at Rockhurst College in Kansas City where he is Assistant Professor. Steve has a busy teaching schedule, being responsible for teaching quantitative analysis and instrumental analysis and also assisting in the physical chemistry lab. He appears to be very busy with collaborative research, and includes among his collaborators Susan Jansen (B.S., 1982, Ph.D. 1986).

Martin Mantler, B.S., is still with Petrolite in St. Louis and now is Systems Manager. He was married in August 1989 and he and his wife Lyann live in Crestwood, MO. Marty is now back in school working on a computer science degree.

Greg Lumetta, B.S., 1982, (Ph.D. 1986) has moved to the Battelle Pacific Northwest Laboratories in Richland, Washington. We heard this news from Dennis Wester (B.S., 1971) who is also on the staff there.

C.W. (Sam) Somawardhana, Ph.D., is still a Research Scientist at the King Faisal Specialist Hospital and

Research Center, in Riyadh, Saudi Arabia and we hope that the current problems in that part of the world are not affecting him adversely. He recently published an article in *Chemical Communications* on "Novel Solid-state Support for Rapid Synthesis of Radiopharmaceuticals Labelled with ^{11}C -Cyanide".

1982-83

Lura (Dee) Lange, B.S., (Ph.D 1991), who defended her thesis this past Fall, is an Assistant Professor of Chemistry at Central Missouri State University in Warrensburg, MO. Dee was featured in *The Condenser*, the C.M.S. Chemistry Department magazine. She is a member of the Missouri Air National Guard.

John Rose, B.S., is a formulation chemist at the Purina Mills Division of Ralston-Purina in St. Louis. He called us last year to see if we had any students looking for positions.

Angelo Vangel, B.S., will be coming back to enroll in the M.S. program at UM-St. Louis in the Fall.

David Main, B.A., is at the McDonnell-Douglas Space Systems in Huntington Beach, CA. He is an Aerospace Scientist and he works on space station airlocks and the Delta Launch Vehicle system. David received a grant from McDonnell-Douglas to spend 1,000 hours in 1990 working with the South Coast Air Quality Management District on the improvement of air quality in the Los Angeles Basin. He is also working on a book!

Dawn Shiang, B.S., (Ph.D., 1988) is with Dow Chemical Company in Midland, MI. Apparently Dawn has made great progress with the company and recently received a performance award. She is currently in Europe demonstrating a new process she developed.

John Wightman, B.A., is now chief emergency medicine resident at Illinois Masonic Medical Center, the north-side trauma center for Chicago. John received his MD from UM-Columbia.

1983-84

Mary Mierkowski (Bremer), B.S., works at the Monsanto Company as a research chemist using GC/MS in the analysis of pesticides in ground-water. She is involved with the analytical reference standards tracking database. She has a 3 year old daughter.

Colleen B. Jonsson, B.A., is a postdoc in the Biochemistry Department of the University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School in

Piscataway, NJ. Colleen graduated with a Ph.D. degree in biochemistry from Purdue University.

William R. Shiang, B.S., (Ph.D. 1989) is now a research chemist with the Dow Chemical Company in Midland, Michigan and has settled very well into a group doing some polymer chemistry. Bill had been a postdoc at Penn. State University in the laboratory of Ken Feldman.

Yuan Di (Judy) Shih, B.A., who holds a Ph.D. degree in bio-chemistry from the University of Missouri-Columbia, just completed a year of post-doctoral research at the University of Kansas Medical Center, and recently was appointed Research Assistant Professor.

Christopher Gore, B.S., about whom we wrote last year, is now a student in our graduate program.

1984-85

Sandra Aubuchon, B.S., is a chemist at Mallinckrodt Inc., in St. Louis.

1985-86

Margaret Aldy, B.S., is a paint and process engineer at the General Motors plant in Wentz-ville, MO.

Jean (Brielmaier) Allen, B.S., works with the St. Louis Valve and Fitting Co. as a Sales and Service Consultant. She is pursuing a mechanical engineering degree at Washington University at night. She is married to Terry Allen who is a quality control engineer at Snyder General Corp.

Ronald K. Webber, M.S., is a senior research chemist at Monsanto Agricultural Company in St. Louis. He completed his M.S. Biology degree at UM-St. Louis May 1990.

Peggy Rifleman (Whitlow), B.A., is employed by the Texas Health Science Center in San Antonio as a Research Associate. She received an excellence in service award in 1990, which included a stipend of \$500 and a certificate. She operates the bio-polymer sequencing and synthesis facility and finds time to volunteer as a mentor at a local high school.

Ravi Kumar, Ph.D., is still a postdoctoral fellow at Louisiana State University in Baton Rouge and was seen at the Fall 1990 ACS meeting in Washington D.C.

1986-87

Thomas Makara, B.S., is a Quality Control Chemist at American Bottoms waste water treatment facility in Illinois.

Bill Schmitt, B.S., is completing the last part of the doctoral general exam, the oral, at MIT. His area of study is nuclear physics and the thesis research is on the electro-disintegration of the deuteron. If all goes well he will graduate by the end of the summer.

Jeffrey Siria, M.S., is now Department Manager, Analytical Services with Environmental Science and Engineering Co. in St. Louis. Jeff is Editor of the *The Chemical Bond*, the publication of the St. Louis Section of the American Chemical Society. Jeff is also a student in our Ph.D. program.

1987-88

Lihsueh (Sherry) Chang, Ph.D., was seen at the ACS meeting in Washington D.C. in the Fall. She continues as a postdoctoral fellow at the University of Cincinnati with Professor Ed. Duetsch serving as group manager.

Christy John, Ph.D., is an Assistant Professor of Radiology, and Nuclear Medicine at George Washington University, D.C. His recent activities involve the development of Tc-radiopharmaceutical, receptor based halogen labeled compounds and monoclonal antibody labeling for diagnostic and therapeutic uses. The editor stayed with Christy and his family during the Fall 1990 ACS meeting in Washington DC. Christy is currently teaching a course in the evenings on "Radio-pharmaceuticals" and will be presenting two papers at the upcoming Annual Meeting of the Society of Nuclear Medicine.

Chitase Lee, M.S., is now working in the CNS Division of the Park-Davis Company in Ann Arbor, Michigan. He is involved in organic synthesis and looks forward to the time when he and his wife Sherry Chang (see above) are working in the same city.

William Lesko, B.S., was recently promoted to supervisor of the Inorganic Chemistry laboratory at Twin Cities Testing, formerly Envirodyne Engineers. Bill is a part-time student in our M.S. program.



Drs D'Souza, Barton and Bill Neumann at a reception for graduates who are Mallinckrodt employees.

William L. Neumann, Ph.D., continues to teach organic chemistry for us in the evenings and has received rave reviews

from the students. Bill recently was coauthor of a paper on Pentaerythritol Amine Deriv-atives which appeared in the January issue of the *Journal of Organic Chemistry*. Bill is a research chemist at Mallinckrodt in St. Louis.

John Pratt, M. S., has just left the Monsanto Company to take up an appointment with Abbot Laboratories in Chicago.

Emily Smith, B.S., was completing her M.S. degree in Polymer Science at the University of Akron when we last saw her at her wedding. Emily was married to Dan Heberer, a recent Ph.D. graduate of the University of Akron, who was about to go to the University of Bristol, England, to do post-doctoral work.

1988-89

Greg Duncan, B.S., is now a Ph.D. student in Chemistry at the University of Southern California.

David Schulte, B.A., is an analytical chemist at the P.D. George Company in St. Louis. David was the first graduate to earn the Biochemistry Certificate which was recently established jointly by the Departments of Biology and Chemistry.

Shuguang Wu, M.S., is a Ph.D. student working in the laboratory of Professor Mostafa El-Sayed at UCLA. His wife, Bo Liu, M.S. 1990, has moved to Los Angeles to be with him but we are not sure what she is doing at the moment.

1989-90

James Murphy, B.S., (B.A., 1989) is working at Sigma Chemical in the "Biochemicals Development" department.

Marie Braton, M.S., is now working at Sigma Chemical Company as a chemist in the Research Technical Service Department.

Bekuretsian Tekle, B.A., is now a chemist at Industrial Testing Laboratories in St. Louis. He is involved in preparation of a range of products including protected nucleotides, proteins, and lipids. He uses HPLC to purify his products and finds the work at Sigma interesting and challenging.

Michael Kopp, B.A., is a development chemist working on structural adhesives and sealants for United Technologies Corporation in St. Louis. He reports that he

has already filed two patent disclosures and has been doing quite a lot of travelling recently for the company to provide technical product service.

Minren Lin, was seen at the ACS meeting in Boston in the Spring of 1990. He continues postdoctoral research at Penn. State University with Professor Senn.

Industrial Relations

On Monday, February 26, a reception was held for **Mallinckrodt Inc.** employees who are UM-St. Louis alumni. There are 55 alumni working at Mallinckrodt, 30 of whom received degrees from the chemistry department, 15 from the school of business, and 6 from the biology department. The reception was a great success with a group of senior Mallinckrodt officials, faculty members and other University personnel present in addition to several alumni. The function was arranged by Kathy Osborn, Director of Alumni and Constituent Relations, Arthur Lewis, B.S.B.A., 1988, and Dr. Lloyd Hill, B.S., 1967. Similar receptions are currently being planned for graduates of the **Monsanto Company** and the **Sigma Chemical Company**. If you would like us to pursue the possibility of such a function with your company, please contact us.

Alumni Agents

The Alumni Relations Office has established a group, the Alumni Agents, which provides financial and other support to the University while members pledge to enlist the support of other alumni. The group is in its third year and graduates of the chemistry department have been conspicuous by their activity. The representation of chemistry alumni outstrips that of all other units except the School of Business. Among those who have participated in this program during the past year are:

Paul Bostick, B.A., 1971
 Barbara(Willis) Brown, B.A., 1984
 Michael Finkes B.S., 1973, M.S., 1978
 Dorothy (Cooke)Greco B.A., 1971
 Lloyd P. Hill, B.S., 1967
 Robert L. Lamberg, B.S., 1972

Graduates 1990

May 1990

Marie Braton M.S.
 Michael Crowley B.S.
 Teresa Hardesty B.A.
 Siddarth Kamath M.S.
 Michael C. Kopp B.A.

Minren Lin Ph.D.
Bo Liu M.S.
Toshio Maruo Ph.D.
Bekuretsian Tekle B.A.
Michael Welsch B.S.

Aug 1990

Hyoryoon Jo M.S.
Carl Von Till B.S.

Dec 1990

Young June Cho Ph.D.
Mark L. Cooper B.S.
Donald Crozier B.S.
Siti A. Hassan B.A.
Donald G. Hesse Ph.D.
Lura D. Lange Ph.D.
Paul Lindenmann B.A.



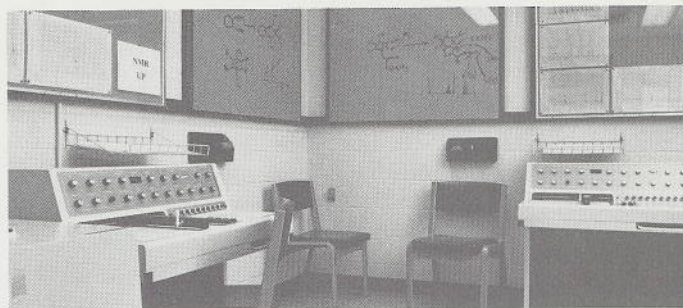
May 1990 graduates, Mike Crowley, Theresa Hardesty and Mike Kopp.

Facilities

It is difficult to maintain the pace of instrumentation acquisition that existed last year when we had just moved into the new building, referred to as the *Science Complex*, but our situation has improved again this year. We have added a low-temperature accessory to the X-ray diffractometer, and have added software including the Cambridge Database so that we now have a very nice facility. The research laboratory of Keith Stine, our new physical chemist, has been set up for his fluorescence microscopy studies, and we are in the process of ordering a dry box and a silicon Graphics Data station for Lee Brammer's new laboratory. We also acquired, through a university grant last year, a color printer/plotter for the Silicon Graphics terminal in Bill Welsh's laboratory.

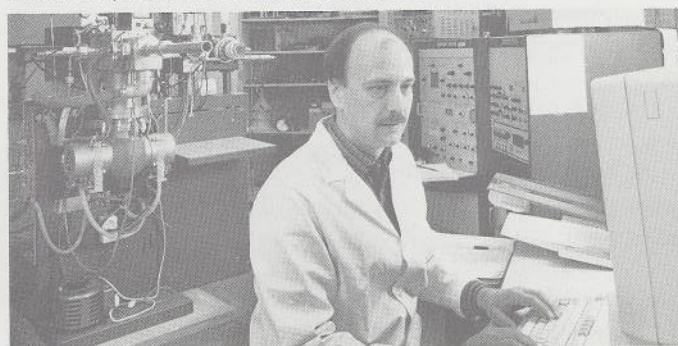
We have added a Technivent Data station to the Varian-Mat 311A mass spectrometer, and Joe Kramer now has the FAB, (fast atom bombardment) gun working well. The undergraduate NMR lab has been completely

refurbished with the two Varian EM-360e Spectrometers donated by Monsanto, through the efforts of Mike Finkes, and our technician Dave Herod has done a splen



The undergraduate NMR laboratory containing equipment donated by Monsanto through the efforts of Mike Finkes

did job of setting up the lab. We were very appreciative to receive, through the efforts of Dave Haywood (B.S. 1983), a range of surplus equipment including three GCs and a balance from Scientific Associates in St. Louis. We also received similar equipment through the efforts of Bob Dittrich (B.S. 1975) from Ralston-Purina.



Joe Kramer using the Varian-Mat 311A mass spectrometer, donated by Monsanto through the efforts of Tom Solsten.

We are always in the market for surplus equipment so please keep us in mind when your company is considering disposing of something. Indeed we have a wish list of items we could desperately use which you may wish to see.

The Faculty

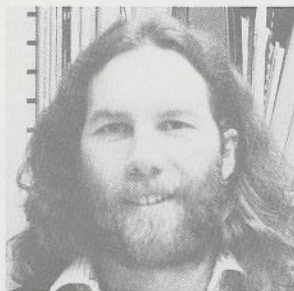
Gordon K. Anderson, continues to run a very productive research program. He currently has four graduate students and one undergraduate working in his lab. Last August he presented a paper at the XIV International Conference on Organometallic Chemistry in Detroit on "Platinum Dimers Bridged by (diphenylphosphino) Cyclopentadienyl ligands" and he recently submitted his 60th research paper.

Charles W. Armbruster, continues to make an enormous contribution to the teaching effort of the department.

This semester he is responsible for teaching about 40% of the total FTE undergraduates in the department.

Lawrence Barton's research program received a boost last year when he added a postdoctoral fellow, Dileep Srivastava, to his group. They have recently submitted papers for publication on the synthesis and structure of some new cuprio-hydroborate complexes and the work will also be described at ACS meetings in Atlanta and Indianapolis later on this year. Dr. Barton was named winner of the ACS St. Louis Section, St. Louis award for 1991 and in June 1990, he received the UM-St. Louis Alumni Association Faculty Service Award.

Lee Brammer joined the faculty this year. He is busy getting the new low temperature attachment for the Xray system installed so he can initiate his studies of electron densities in organometallic compounds. He was received the *S. S. Sidhu Award* from the Pittsburgh Diffractometry Society in 1990. The award is presented annually to a scientist



Dr. Lee Brammer

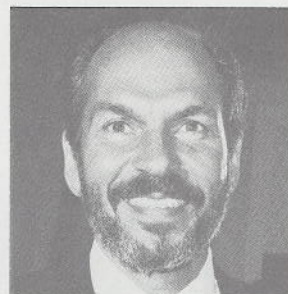
under 33 who has made significant contributions to the field of diffraction. Dr. Brammer has been appointed to the participating research team for single crystal neutron diffraction at Brookhaven National Lab.

James S. Chickos lectured in France this past summer at the CNRS Center for Thermodynamics and Microcalorimetry and expects to do so again this coming summer. His research program is currently very productive in terms of publications. A Ph.D. student, Don Hesse, and a thesis master's student, Marie Braton, graduated this past year from his group.

Joyce Y. Corey had one Ph.D. student graduate recently (Dee Lange) and another is currently writing her thesis so Joyce anticipates being without graduate students for the first time in 15 years. On the other hand, she hopes to be able to recruit a postdoctoral fellow in the near future. She has been busy serving on the search committee for a new Chancellor but still is able to run a very productive research program. Students working in her research lab this year won both out-standing junior and senior undergraduate student awards.

Valerian T. D'Souza published two articles this past year on his artificial enzyme research and he is in the process of recruiting a postdoctoral fellow with funds received from Mallinckrodt Inc. and the Missouri Research Assistance Act. His research group now includes five graduate students and several undergraduates.

David L. Garin serves as Chairman of the St. Louis Section of the American Chemical Society. His first major task was to moderate the symposium, "Science Education in the 90's: A Call to Action". The symposium honored incoming ACS President Dr. S. Allen Heininger. Dr. Garin also serves as Interim Director of the Center for Science and Technology and in this capacity was a recipient of a \$45,000 grant from the State for a science education project.



Dr. David Garin

John L. Gutweiler still teaches quantitative analysis and other introductory courses in the department. John completes his 20th year here this year.

Harold H. (Hal) Harris continues his research in "chaotic" molecular vibrations. His Ph.D. student, Young June Cho, who graduated in January 1991, is now doing postdoctoral research at Wayne State University. As the keynote speaker at the Missouri Home Economics Association meeting recently, Hal lectured on anthropogenic modification of the atmosphere. The energy he used to expend in competitive running now goes into tennis, and he was fortunate to have participated in a national championship men's 3.0 USA tennis team in 1990.

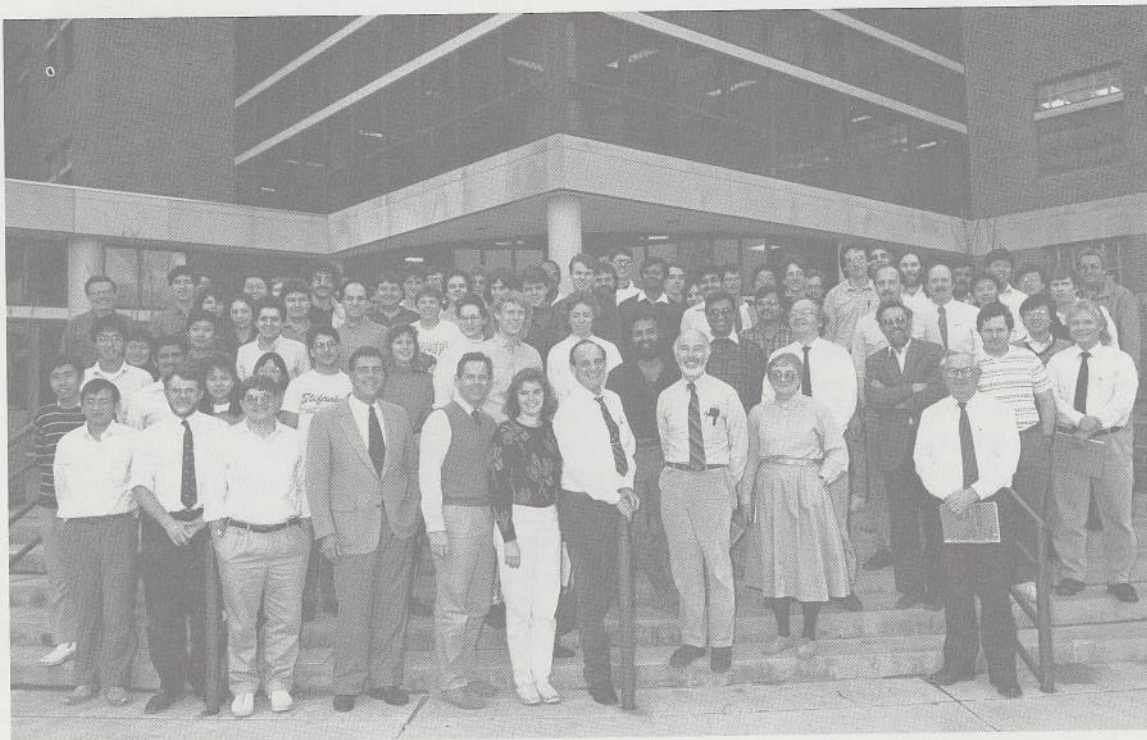
Wesley R. Harris receives tenure this year. His research program in bioinorganic chemistry is proceeding very well and has received a boost recently in the form of funded industrial collaboration. He is supporting a postdoctoral fellow with funds from Mallinckrodt Inc. and the Missouri Research Assistance Act and an undergraduate with funds from the Monsanto Company. His research group comprises two postdoctoral fellows, three graduate students, and an undergraduate student and is also supported by the N.I.H.

M. Thomas Jones is now Deputy to the President of the University of Houston and a Fellow of the Texas Center for High Temperature Superconductivity. Tom is formally on leave from the department and currently has post-doctoral fellow, Dr. Kim Kilgore, working in his lab here.

David W. Larsen is charting new and somewhat unconventional territory in his research program. He is currently constructing a NMR spectrometer for studies involving MRI contrast agent as part of a study funded by Mallinckrodt Inc. and the Missouri Research Assistance Act. He and a colleague from UM-Columbia recently were issued a patent for a process for treatment of hazardous waters by reverse burn gasification. He is also very active in hydrogel lens water binding studies by NMR in conjunction with colleagues in optometry. In August 1990, he made a presentation conference in Monaco, Monte Carlo on "Hydrogel Lens Water Binding Determination by NMR Spectroscopy: Correlation with *in vivo* Dehydration Data" at the International Symposium for Contact Lens Research.

Jane A. Miller continues her activity in studies on the history of science. In April 1991 she will host the Midwest Junto for the History of Science which will be held in St. Louis. Dr. Miller has been a member of the writing team for *Chemsource*. This is a project funded by the NSF to address the critical problem of large numbers of inexperienced or underprepared chemistry teachers who work in our schools.

Robert W. Murray finds it hard to top 1990 when he won the ACS Midwest Award and also the University of Missouri *Presidential Award for Research and Creativity*. His research on dimethyldioxiranes continues to go well. He has two patents pending, one on the preparation of nitroxides and the other on the formation of hydroxylamines and a disclosure has been filed on the formation of nitrones. His research support received a major boost recently when he received a MERIT award from the NIH. This means he will have 10 more years of



The chemistry department seminar audience poses at the entrance to the Science Complex in February 1991 support without submitting any additional grant proposals.

James J. O'Brien continues to equip his laboratory for intracavity laser spectroscopic studies. He will study the gas phase species involved in CVD and also projects of astronomical importance such as methane bands in

the upper atmosphere. Jim received a major grant from NASA for his methane studies and is in the process of establishing a collaborative research program with colleagues at Monsanto.

James P. Riehl continues his research on circularly polarized luminescence, and he is currently supporting

a postdoctoral research associate from Poland, Dr. Anna Mondry. His former student, Nursen Coruh, has just begun a postdoctoral appointment at the University of California-San Diego. Dr. Riehl has been recommended for promotion to professor this year.



Dr. James Riehl

Christopher D. Spilling has established his research program and now has 4 graduate students and several under-graduates working in his laboratory. He is currently recruiting a postdoctoral fellow with funds obtained through a grant to the department from Monsanto.

Nigam P. Rath was appointed to a permanent position as Research Assistant Professor. He keeps the X-ray diffractometer running 24 hours a day and has solved structures in collaboration with Drs. Anderson, Barton, Corey, Jones, Winter, Murray etc,etc,



Dr. Nigam Rath

Keith Stine who joined the faculty this academic year will soon begin experiments in his new laboratory in the Research Wing. He is about to begin some collaborative theoretical work on monolayers with a colleague from the National University of Mexico. He is also preparing a review article on fluorescence microscopy which will be presented at the symposium "Resolution in the Microscope" in San Jose, in August, and published in the journal "Ultra-microscopy".

William J. Welsh was promoted to Associate Professor and awarded tenure this past year. His research group continues their computer-aided modeling studies of biological molecules and high performance polymers. His present group includes 3 Ph.D. students, 2 postdoctoral

fellows, 1 graduate fellow and a visiting scientist from St. Louis University, Dr. Judy Durham. Bill is kept busy writing research proposal and articles. He is organizing a symposium on Computer-Aided Molecular Design which will be held in May.

Rudolph E. K. Winter will be on sabbatical leave next year. He intends to spend some time at Louisiana State University in the laboratory of Professor Klaus Fischer.



Dr. Keith Stine

The Staff

Betty Eshbaugh, Administrative Secretary, continues to run the department, in many respects.

Bob Cabaniss, Scientific Glass-blower, is happy in his new shop on the fourth floor of Benton Hall.



Bob Cabaniss in his glassblowing shop

Ted Windsor, Senior Electronics Technician, still claims to have the best view of all from the research wing. Ted continues to do a whole range of jobs for the department.

David Herod, Electronics Technician, has done a good job in setting up the refurbished NMR lab on the fourth floor of Benton Hall and is busy learning some of the routine for running the XL-300.



David Herod

Joe Kramer, Electronics Technician, has been busy setting up the Varian Mat 311A mass spectrometer. He has the system running well but is perhaps best known as the feeder of the ducks on Bugg Lake.

Randa Schneider, Secretary, continues to improve her computer graphics skills. She uses Chemtext to make slides and other drawing for faculty and students.

Sylvia Stephens, Secretary, types most of the manuscripts which are done in the office, and she has become quite an expert on our word processing program *Word*.

Donna Palmer, Supervisor, Chemistry Stores joined the staff last summer and has reorganized the stockroom. Donna previously worked in the Center for International Studies and is pursuing a degree in chemistry.



Donna Palmer

Postdoctoral Fellows

Mohammad Ashraful Islam has been working with Wes Harris since March 1990. He received his Ph.D. degree from SIU-Carbondale after receiving a M.S. degree from the University of Dacca, Bangladesh. He has postdoctoral experience from the University of Alabama, Rice and the University of Missouri-Columbia.

Dileep K. Srivastava has worked in with Dr. Barton since May 1990. He received his Ph.D. in synthetic inorganic chemistry from Banaras Hindu University, in Varanasi, India, and has held postdoctoral appointments with Professors Larry Krannich at the University of Alabama-Birmingham, and Bob Paine at the University of New Mexico.

Kimberly Kilgore is the sole occupant of Dr. Jones' laboratory at the moment. Kim came to UM-St.Louis in January 1991. She received her B.S. degree from Muskingham College, and her Ph.D. degree from Penn State where she worked on molecular beams. of NH_3 clusters. At UM-St. Louis she is working on organometallic-based synthetic metals in addition to operating the ESR.

Wei Kong joined Dr. Murray's research group in October 1990 after receiving her Ph.D. degree from the University of Notre Dame under the direction of Professor Daniel Pasto. She is a physical-organic chemist and received an M.S. degree from the Dalian Institute of Chemical Physics, Chinese Academy of Sciences, in Dalian, China.

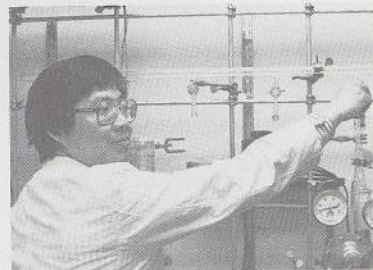
Leonard O. Rosik has been working with Wes Harris since July 1990. He received his undergraduate degree from Blackburn College and his Ph.D. from Washington University under the direction of Dr. Al Hortmann. He spent three years as a postdoc at the Washington University School of Medicine with Professor Fred Sweet prior to joining us.

Megh Singh is the senior postdoc in the department and serves as a lieutenant for Professor Murray. Megh originally came to UM-St. Louis to work with Tom Jones and has worked with Dr. Murray since December 1987. He received his Ph.D. from the University of Jodhpur in India, and did postdoctoral work as a NSERC Fellow in Canada prior to joining us.

Wangkan Lin joined Bill Welsh's group in January 1990 after a period as Research Associate with Biosym Technologies, in San Diego. He is a computational chemist and he received his Ph.D. from Ohio State where he worked with Professor Daryle Busch. He is from China and received his B.S. degree from Jilin University in Changchun.

Anna Mondry hails from Wroclaw, Poland. She received her Ph.D. from the Institute of Chemistry, University of Wroclaw where she studied spectroscopic properties of lanthanide complexes. She joined the research group of Professor Riehl in September 1990.

Samuel H. Tersigni received his Ph.D. degree from the University of Chicago where he worked with Professor Stuart Rice. He received his undergraduate degree from Stevens Institute of Technology, in Hoboken, New Jersey, and joined the research group of Dr. Welsh in April 1990 as a computational chemist.



Jack Uang in Dr. Chickos' lab

Yuh-Jye (Jack) Uang has been working with Dr. Chickos since September 1989. He is from Taiwan and received his B.S. degree from Soochow University. He received his Ph.D. degree from UM-Rolla where he worked with Dr. Frank Blum and worked in the pharmaceutical industry in Taiwan prior to coming to the US.

Contributions 1990-91

\$0-49

Rushdi Alul	Siddharth Kamath
Patricia Barton	Vernon Koziatek
Debora Bergstrom	Robert L. Lamberg
Roger W. Buchanan	Martin P. Mantler
Katherine H. Carr	Marie S. Mates
John J. Chaber	Michael K. Maxwell
Donna J. Demestre	Lisa L. McChesney
Irene Drizin	Sandra K. Mueller
Jodie L. Duke, Jr.	Dennis Patterson
Elizabeth D. Galie	Lawrence Payette
Fatemah Ghasedi	John K. Pratt
Elyse Gherardini	Alicia M. Rohde
Joseph G. Groaning	Dikla Roufa
Steven J. Harrison	C. R. Sharp
Lance G. Hellwig	Jeffrey W. Siria
David E. Henton	Jang-Szu Su
Daniel R. Henton	D. Tannenbaum
Susan M. Holl	D. Timmerman
Richard A. Hoyt	Arlene Vogelsang
Clyde R. Hudson	Nathan Wagner
Stephen Jerowski	Mark R. Williams
Colleen B. Jonsson	Karen L. Wright
Larry A. Justice	Michael W. Young

\$50-99

John C. Ackerman	Wiley L. Moore
Susan M. Auinbauh	Jerry F. Orlando
Ali A. Bazzi	Dennis P. Parazak
Phyllis R. Bennet	Gary Perryman
Thomas J. Byrd	Janet Place
Arthur Clark, Jr.	Andrew Ratermann
Robert W. Dugger	John Reutner, Jr.
Michael J. Finkes	Myron O. Rhodes
Patricia A. Grooms	Margaret Rifleman
Daniel A. Grumke	Kathleen A. Riggio
Richard E. Hauhart	Bruce E. Ritts
Gary Jacob	Karl W. Seper
Mark A. Leiber	John J. Taylor
John Link	Dennis W. Wester
Steven J. Mertens	Richard Wisneski
Mary Mierkowski	

\$100-249

Sandra E. Aubuchon	Richard G. Mrad
Gerard R. Beasley	Joseph O. Muo
Kevin A. Berdak	Mark H. Owens
Louis F. Crepps	Kenneth E. Owens
James K. Grant	Ann M. Reynhout
Gregory A. Hileman	Jeffery A. Ronecker
Andrew J. Hilliker	William R. Shiang
Christy S. John	Steven R. Staat
John R. Kolb	Gregory Thudium
Shailendra Kumar	Angelo Vangel, Jr.
Ross Larson, Jr.	Gregory R. Webb
Stephen McCarthy	Mark D. Wilfong

\$250-500

Gregory P. Genova	C. Thierheimer, Jr.
Dorothy C. Greco	Leslie E. Tucker

Departmental Awards

Again we continued the tradition of holding the departmental awards presentation at the last Departmental Colloquium of the year. The seminar was presented by Harold R. Messler (Class of 1970, see below) on Monday April 30, and was followed by a reception to honor the class of 1990 and the awardees, their families and friends. This year, with the help of an "Aid to Education Award" from the Monsanto Company, we are again making 10 "Books and Educational Materials Scholarships" to sophomore through senior chemistry majors. The idea is to recognize good performance and need and to encourage more students to declare themselves as chemistry majors. The funds, in addition to paying for books etc., also cover the cost of Student Affiliate membership in the American Chemical Society.

Undergraduate

The award for the *Outstanding Student in Introductory Chemistry* went to Amy Carroll last year. Amy was presented with a certificate and her name was submitted to the Chemical Rubber Company who were to send her a copy of the *CRC Handbook of Chemistry and Physics*. The *American Chemical Society Award for Analytical Chemistry* went to Michael Schreiner. Mike received a certificate and a one-year subscription to the journal *Analytical Chemistry*. The *American Chemical Society - St. Louis Section's Outstanding Junior Award* went to Thomas C. Bedard. Tom was also the 1990-91 *Brunngraber Fellow*. He was selected by the faculty to receive an \$1,100 honorarium for the academic year. Tom chose to carry out his research in Joyce Corey's lab. We are very pleased to report that this fund continues to grow so that we will be able to continue the award much longer than we had originally anticipated. We thank all

those of you who have contributed to our honoring of the late Eric G. Brunngraber.

The 1989-90 *Alan F. Berndt Outstanding Senior Award* went to Michael M. Crowley. The *American Institute of Chemists Medal* also goes to the outstanding senior. Mike was named the 1988-89 Outstanding Junior two years ago. Mike received his B.S. degree and is now a Ph.D. student at Washington University. Last year the Monsanto Aid to Education awardees were Tom Bedard, Todd Boehlow, Mark Cooper, Scott Long, Christopher Mallory, Richard Sconce, David Straatman, Jean Huhmann, Christie Silver, and Kim Wein.

Graduate

The 1990-91 Mallinckrodt Fellowship went to Linda McMillan. Linda received her undergraduate degree from the College of Mount St. Joseph in Cincinnati, Ohio. She entered the Ph.D. program in the Fall 1987 and is working with Bill Welsh. The 1989 *Alumni Summer Graduate Fellowships* went to Marc Lord and Steven Kolodziej, both of whom are graduate students with Rudi Winter, and Linda MacMillan received a *Graduate School Summer Fellowship*.

Alumni

The 1990 *Distinguished Alumni Lecture* was given by Mr Harold R. Messler who received a B.S. degree in 1970. Harold is Chief Criminalist in the City of St. Louis Police Department Laboratories. Harold is a well-known forensic scientist and has lectured around the world on forensic science. The title of his presentation was "Forensic Chemistry".

We nominated an alumnus for one of the five awards given by the Alumni Association to "Outstanding Alumni". We were unsuccessful but we hope to announce one next year.

New Awards

We are pleased to announce several new awards this year. We are initiating some Fellowships to outstanding applicants to our program to encourage them to enroll at UM-St. Louis. Prospective students who have been offered any University Scholarship and who have identified chemistry as their chosen major will be award Fellowships in the range \$500-\$750, depending on the availability of funds. Ideally we will offer about four per year.

Another new idea we have is to provide part-time employment for chemistry majors in a tutoring lab. We hope to enlist some financial support for this

from the University as well as from our alumni gift funds. Thus we will be helping students both financially and academically.

Mr. Ronald Harris, who received an M.B.A. in 1988 has agreed to support a Fellowship for a minority science student. We are currently in the process of selecting a candidate and in doing so we have some ideas about raising funds from local industry to support other worthy minority chemistry majors. We are also pleased to announce that Dr. Robert Lamberg will support an undergraduate research fellowship in the department for the next four years. We intend to administer the fellowship in a similar way to the Brunngraber Fellowship. In addition, there will be a new award given annually to a part-time MS student.

Support

The department maintains several accounts which are the result of contributions by our alumni. These include the Alumni Gift Account which we use to fund summer graduate fellowships, alumni functions, printing, mailing etc., the Brunngraber Account which funds the undergraduate research fellowship, 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.

Last year Harold Messler made a contribution in honor of Jack Coombs, our long-time stock-room manager, to establish stipends/scholarships for students to work in the chemistry stockroom. Harold worked in the stockroom as an undergraduate. Ted Windsor also made a major contribution to this fund in honor of Jack, and we hope to continue to collect contributions for this worthy cause. The idea is to support needy students and to establish competitive scholarships based on academic performance. To contribute to this fund, please indicate so on the tear-off sheet on the next page.

We depend on you for support but not only for financial support. 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.

Editor-Lawrence Barton

UM-St. Louis Chemistry Alumni Fund

Enclosed is my contribution of \$ _____, _____. Yes, I work for a matching gift corporation.

Designation for funds:

E.G. Brunngraber Fellowship: _____

Undergraduate: _____

Graduate: _____

Unrestricted: _____

Please make check payable to UMSL. "Chemistry Alumni Fund" and return to:

Lawrence Barton
Department of Chemistry
University of Missouri-St. Louis
St. Louis, MO 63121

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INFORMATION UPDATE

Please respond to this questionnaire. We have mentioned previously how important it is for us to keep track of what you are doing, both professionally and personally.

Name _____

UMSL Degree _____ Year _____

Current mailing address:

Employer: _____

Current Position: _____

Recent Activities: _____

Other News!! _____

