



Department of Chemistry

Volume 8

UMSL CHEMIST

University of Missouri-St. Louis

April 1990

Chairman's Message

It is hard to believe that this is the eighth volume of the reborn UMSL CHEMIST. We continue to receive your thanks and compliments about it and we hope we are to be able to maintain the standard we set in earlier volumes.

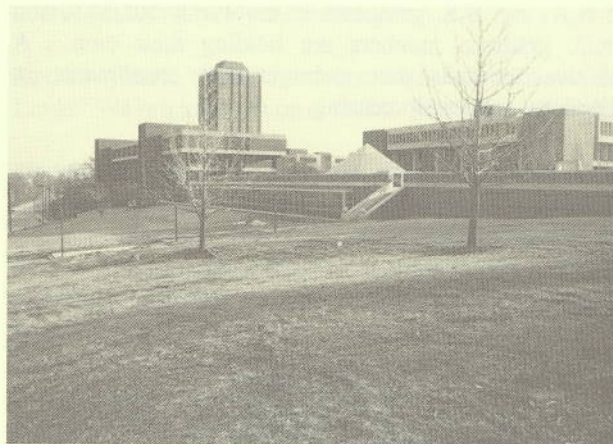
This has been a good year for the department. The 1989-90 represents the first full year in which we will have occupied the new building. We are, of course, very pleased with our facilities and would be happy to give tours to any of you that stop by the department. The campus has a new look. Some of the landscaping around the Science Complex is complete. Bugg Lake has been refilled, a new stage built, a fountain has just been installed and footpaths now encircle the lake. There was talk about renaming it but we are relieved that such silliness has past. Trees have been planted and the grove of trees planted as a memorial to Eugene Corey will soon be in place.



Bugg Lake Fountain

Other developments on the campus include completion of the library addition. The exterior view was designed to resemble the front of the Louvre in Paris. Much of the landscaping is complete and access around the exterior of the whole structure is now much more convenient. The journal collection is housed in the new construction on the lower level. Once all the new furniture is in place, it will represent a substantial improvement on the crowded conditions we previously endured. Access to the monograph collection on the fifth floor is now made via a spiral stair-case (a right handed helix!).

The ACS Midwest Regional Meeting was held in St. Louis in November 1989 and the department was



View of the Library addition looking North

very prominent in it. Dr. Riehl served as the Program Chairman, Dr. Garin served as the Symposium Chairman and Dr. Jones was the Treasurer. Dr. D'Souza, chaired the symposium *Enzyme Mimics-A Tribute to Myron L. Bender*, and Drs Anderson and Harris co-chaired the symposium *Inorganic Chemistry in Medicine*. During the meeting, our students and faculty presented more than 30 papers. In addition, Drs Larsen and Welsh gave symposium lectures. The highlight of the meeting was the 1989 Midwest Meeting Banquet when Dr. Murray was presented with the award and gave the Midwest Award Address. A reception, attended by about 25 alumni along with faculty students and others, preceded the banquet.

The department continues to change. Next Fall we will have 19 regular full-time and two non-regular faculty members. Dr. Jones continues to run an active and productive research program in the department although he is now formally a member of the administration as Deputy to the Chancellor. Last Fall we added Dr. Nigam Rath, as the department X-ray crystallographer, and recently we recruited two new regular faculty members. Dr. Keith Stine, a physical chemist, and Dr. Lee Brammer, an inorganic chemist both recently accepted offers. These latter are replacements for Tom Jones and Eugene Corey respectively and information about all three is found later in this issue.

We continue to improve our record in the area of external grants. We were able to attract \$593K last year and early figures for this year indicate similar success. Three colleagues, Drs. D'Souza, W. Harris, and Larsen enjoy funded collaborative research programs

with Mallinckrodt, our postdoctoral and undergraduate research support from Monsanto continues, and we are pleased to announce the establishment of several sophomore/junior level "Books and Materials Scholarships" funded by the Monsanto Company. There are now 12 postdoctoral fellows either in the department or currently being recruited. On the other hand the enrollment in chemistry here fares no better than elsewhere. We have seen a steady decline in the number of B.A. and B.S. graduates in the 1980s but M.S. and Ph.D. graduate numbers are holding their own. A positive trend is that undergraduate enrollments in chemistry are now increasing.

or if you are looking for a new job, please let me know. I can often be helpful in this respect.

We wish you all the very best in your careers and in your personal lives.

Sincerely,

Lawrence Barton
Professor and Chairman

Alumni Information

1966-67

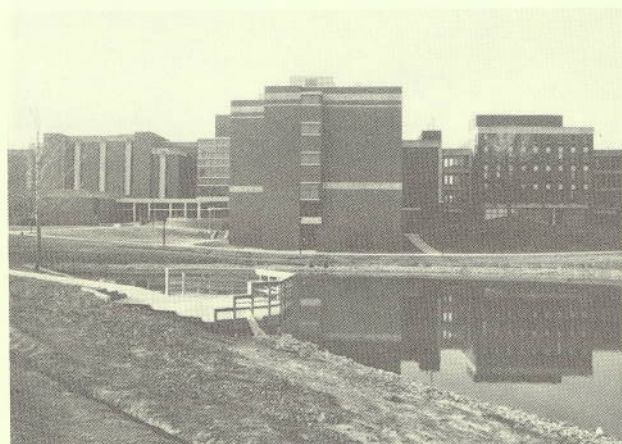
David Henton, B.S., gave the third annual *Distinguished Alumni Lecture* in 1989. He spoke on "Polystyrene Polymerization" at the annual Awards Ceremony in May 1989.

Lloyd Hill B.S., recently agreed to serve as an alumni agent for Mallinckrodt Inc. in St. Louis and was instrumental in setting up the recent reception for Mallinckrodt employees who are UM-St. Louis alumni.

Donald M. Kaesser, B.S., recently received a Ph.D. in Psychology from Iowa State University. Don just took up an appointment as Licensed Psychologist and Director of Outreach Services for *Social and Psychological Associates* in Des Moines, Iowa. In his work he interacts with MDs and finds that his background in chemistry serves him well in his career as a psychologist. His wife Mary is completing her Master's in Social Work degree and will soon join the practice. Don presented the paper "The Use of Logotherapy in the Development and Operation of a Partial Hospitalization Program" at the World Congress of Logotherapy in Kansas City in June 1989.

1967-68

Dennis Patterson, B.S., is manager of Fungicide Discovery Research and Corporate Biotechnology for the Rohm and Haas Company in Philadelphia. We met one of Dennis' colleagues at the 1989 Council for Chemical Research Meeting in Parsippany, New Jersey. Dennis received his Ph.D. degree from the University of Chicago and did post-doctoral research at the University of Sherbrooke, in Quebec, prior to joining Rohm and Haas.



View across the Bugg Lake Overlook

Earlier this year you may have read about rumors of the possibility of Chancellor Barnett leaving. We are pleased to report that she is still with us and that one of the battles she has been fighting for the campus, the establishment of an undergraduate program in engineering for non-traditional students, is much closer to reality. The various outreach programs and partnerships with different segments of the community, pioneered by Chancellor Barnett, continue to thrive as the UM-St. Louis campus' presence grows in stature and importance.

Support from alumni continues to be very gratifying. We hear from many of you regularly but we would like to hear from more of you. To recount your successes is the best message we can send to those who control the purse-strings so please complete the information update at the end of this news-letter.

Finally, we hope to see many of you at the annual Alumni Reception which has been rescheduled for October 12 1990. If you are looking for employees,

1968-69

Joseph P. Bono, B.A., is now working for the US Department of Justice in the Drug Enforcement Agency in Washington, D.C.

Charles A. Heil, B.S., has not been heard from for several years but we note that he coauthored a paper from his dissertation research at the University of Colorado where he received his Ph.D. degree. The paper was on "The Reaction of Trimethylamine with GeH_3Br ". We understand that Chuck is teaching in the Cincinnati area.

Steven Mestemacher, B.A., was in the department last Fall and took a tour of the new building. Steve was pleasantly surprised that we recognized him as he waited for Dr. Armbruster to complete a class.

James Reilly, B.S., was at the Midwest Regional ACS Meeting in St. Louis in the Fall. He has been a faculty member at the Wentworth Military Academy in Lexington, MO., for many years. Jim sent the department a Christmas card containing some nice, and some amusing, remarks. We reproduce those comments below.

Dear Friends and Former Teachers:

I certainly enjoyed visiting with you at the ACS Regional Meeting. Some of the happiest moments of my life were spent at the UMSL chemistry department. If there is another chemistry faculty anywhere which treats former students with such friendliness and warmth, I don't know it.

Perhaps you missed this C & E News limerick.

"A mosquito was heard to exclaim
A chemist is wrecking my brain
And the cause of my sorrow
Is *para*-dichloro-
Diphenyltrichloro ethane".

1969-70

Gary Beck, B.A., we are saddened to note, died from Leukemia in 1988. Gary had been at Monsanto for many years working in what used to be the organometallic catalysis group.

Gene T. Bohn, B.S., sent us a very newsy letter. He is with UniRoyal and recently transferred from the position as Manager Process Control, to Research Scientist at UniRoyal Engineered Products Co. As Process Control

Manager, Gene was responsible for all technical aspects of the manufacture of UniRoyal's vinyl-coated plastics at the Mishawaka Production Plant in Mishawaka, Indiana. In April, 1989, he was awarded the company's "Challenge of Excellence" award for "outstanding contributions" to sales and profitability gains as Process Control Manager. Gene, who completed a MS degree at Iowa State University in the early 1970s, notes that his current work is a far cry from the undergraduate research he did with yours truly 20 years ago!

Arthur Clark, B.A., continues with Monsanto in St. Louis. We ran into him on a visit to Monsanto last Fall.

Harold Messler, B.S., has been elected chairman of the 2,000-strong St. Louis Section of the American Chemical Society. Harold is Chief Criminologist for the St. Louis Metropolitan Police Department. We comment elsewhere that Harold made a contribution to initiate a fund in the name of Jack Coombs, who most of us remember as stockroom manager, confidant, and good friend for 12 years between 1965 and 1977. We are pleased that Harold will present the *Third Annual Distinguished Alumni Lecture* at the department Awards Ceremony on April 30.

1970-71

Glen Snow, B.A., is Manager of Marketing and Administration with Calgon Corporation's International Specialty Group in Pittsburgh, PA.

Dennis W. Wester, B.S., just moved to the position of Senior Research Scientist at the Battelle Pacific Northwest Labs, in Richland, Washington, where he will be working in the production of isotopes for nuclear medicine applications. Dennis tells us he is happy to be back in the mainstream of nuclear medicine research.

1971-72

Carol (Steed) Green, B.S., (M.S. 1982) teaches chemistry at Wentzville High School. Previously, Carol taught at Wright City High School. For the last three years she has served as one of four Mentors in the Engleman Institute, a summer program in science held at UMSL for outstanding High School sophomores and juniors.

1972-73

Michael Finkes, B.S., (M.S. 1978), is still with the Monsanto company and recently became an *Alumni Agent*. Mike was very helpful to us recently in assisting our acquisition of a surplus NMR spectrometer from his

company. It is a Varian EM-360e which will replace the Varian T-60 we use in the undergraduate organic laboratory.

1973-74

John M. (Jack) Crump, B.S., was married to Ginger Anne Brunner in Mariana, Florida in June 1989. We read from the announcement in the St. Louis Post-Dispatch that Ginger is employed as a pediatric critical care physician's assistant at Wolfson Children's Hospital in Jacksonville, FL. Jack is Director of the Surgical Intensive Care Unit and Assistant Professor of Surgery at the University of Florida-Jacksonville. He received his MD degree from the University of Missouri-Columbia.

Kenneth Henderson, B.S., is Group Leader of the Rheology Group at Ethyl Corporation, Petroleum Additives Division, in St. Louis. Ken is also the Safety Coordinator for the laboratories in St. Louis.

Virginia (Ginny Martin) Houserman, B.S., moved from her position as Assistant Professor of OB-GYN Reproductive Endocrinology at St. Louis University, to Birmingham, Alabama, where she is in private practice which involves *in-vitro* fertilization. Ginny, last year, published a basic scientific publication in which she was the principal author but she didn't give us the title. We wish her well in her new venture.

1974-75

Dan Breyfogle, B.S., is Laboratory Manager for the Butcher Company in Marlboro, Massachusetts. He recently contacted us about a position for which he was recruiting.

1975-76

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.

1976-77

Patricia J. Barton, B.A., who served as Coordinator for Cultural Affairs at the University for 3 years and ran the campus chamber music program *Premier Performances*, recently was appointed Coordinator of Title III and Other Sponsored Programs at Harris-Stowe State College in St. Louis.

Steven J. Harrison, B.S., is Marketing Manager with the Carboline Co. in St. Louis. Steve received his MBA degree from Lindenwood College in 1986. He and his wife were expecting their first child in August 1988.

Mark Owens, B.S., (M.S. 82) is employed by Mallinckrodt Inc. in St. Louis as an Analytical Research Chemist. He was recently put in charge of the new data acquisition system for chemistry. He runs a computer bulletin board as a hobby when he and his wife Theresa, also an UMSL grad, are not busy with their two sons Paul (6+) and Patrick (2+).

1977-78

Russell Moutray, B.S., received his MS degree in the department last year. Russ moved from Petrolite, where he had been for several years, to Chemsico where he is the analytical chemist. Russ was kind enough to donate some very useful equipment to the department earlier this year.

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

1979-80

Heuch Tien (Vincent) Chang, M.S., is now with Abbott Laboratories in Chicago. He had been with Syntex in Freeport in the Bahamas.

Randy Johnston, B.S., who holds a Ph.D. from Texas Tech and did postdoctoral research at the Naval Research Laboratory in Washington DC, is Assistant Professor of Chemistry at Memphis State University. We neglected to note last year that Randy presented a seminar in the department on "Insertion of CO₂ into Transition Metal-Ligand Bonds" in the 1987-88 year.

Larry Revelle, Ph.D., is now at the National Center for Drug Analysis in St. Louis. Larry is involved in the synthesis and characterization of optically active drugs.

Charles Tatosian, B.S., we heard, was practicing dentistry in Kailua, Hawaii, but more recently we were informed that he had relocated to Houston, Texas. Charlie received his DDS from UMKC.

1980-81

Normand M. Del Castillo, B.S., is with the A. L. Williams firm of financial consultants, in St. Louis, working as regional manager. Norm completed a MBA

degree from UM-St. Louis after receiving his chemistry degree.

Michael Drain, B.S., is now a Postdoctoral Associate at the Rockefeller University in New York City studying membrane biophysics and electrostatics.

Dennis Parazak, B.S., (M.S. 1987) continues as a R & D Chemist for Petrolite in St. Louis. His company sent him to Thyssen Steel, in West Germany last April for a plant trial of a product that he developed. In his spare time Dennis works in a local band called "Mixed Company" and plays at local nightclubs twice a week.

Charles Theirheimer, B.S., (M.S. 1984) works as a research chemist at Hewlett-Packard in Eugene, Oregon. He is involved in the development of inks and in studying their various properties. He is pursuing a mechanical engineering degree

1981-82

Mark Knollman, B.A., is a general dentist in a group practice in Ashville, North Carolina. Mark, who received his DDS from UMKC in 1987, lives in North Carolina with his wife Mary and 4-year old daughter Emily. Mark was in the department recently.

Shailendra Kumar, Ph.D. 1981, is now Assistant Professor of Chemistry at Governor's State University in Chicago. Shelly was a research associate and instructor at UCLA prior to taking up this appointment last Fall. He was recently in St. Louis for the 1989 ACS Midwest Regional Meeting to see Professor Murray receive the Midwest Award.

Steven L. Lawrence, B.A., received his Ph.D. degree in August in the department with Professor John Schreifels. Steve is now an Assistant Professor of Analytical Chemistry at Rockhurst College in Kansas City.

Greg Lumetta, B.S., 1982, (Ph.D. 1986) is still a Postdoctoral Research Associate at the Oakridge National Laboratory, in Knoxville Tennessee. Greg is studying the extraction of divalent first-row transition metal ions with sulphonic acids and crown ethers. We note that Greg recently published a paper in the *Journal of Coordination Chemistry* on "Lipid-soluble Antitumor Pt Complexes". He and his wife Michelle are looking forward to purchasing a house.

Martin Mantler, B.S., is employed as a chemist by Petrolite in St. Louis. We understand he has become quite a computer wizard!

C.W. (Sam) Somawardhana, Ph.D., is a Research Scientist at the King Faisal Specialist Hospital and Research Center, in Riyadh, Saudi Arabia. Sam was in town for the Society of Nuclear Medicine Conference in the Spring and we were happy that he stopped by the department. Sam still has a home in San Antonio, Texas and expects that one day he will return to the US.

James M. Timper, B.S., (M.S. 1984), is still at the Catholic University, in Washington DC., completing a M.S. degree in mathematics part-time. Jim tells us that his role in the Generic Drug scandal was to straighten out reviews of drug applications and he tells us that UM-St. Louis is well represented by his work.

Angelo Vangel, B.S., has been employed in quality control at the Petrolite Corporation for several years. Angelo was recently promoted to the day shift supervisor. He replaced Gregory P. Noelken (B.S. 82), who had been in the position for several years. Greg was recently transferred to the water clarification research group.

1982-83

Debra (Liebrecht) Hauser, B.S., is now a project manager with Law Associates, Asbestos and Materials Consultants in St. Louis. We saw Debbie at the reception to honor Professor Murray at the recent ACS Midwest Regional Meeting.

David Miller, B.A., graduated from the University of Missouri-Columbia's Medical School last May and is currently in a three year position at St. John's Mercy Medical Center as a resident physician in family practice.

Joseph O. Muo, B.S., continues to update us on his work at St. Mary's Health Center in Richmond Heights. Joe is a medical technologist involved in isoamylase electrophoresis and in CPK and LDH isoenzymes. A central question in his work is: Why do some people put on weight with very little food intake?.

Dawn L. (Johnson) Shiang, B.S., (Ph.D. 1988) is now a research chemist with the Dow Chemical Company in Midland Michigan. Dawn had been a postdoc at Penn. State University in the laboratory of Gordon Hamilton.

1983-84

Suzanne M. Mates, B.S., is now a financial analyst with the May Company. Sue received her MBA degree from Washington University in 1989 and in doing so received the *Wall Street Journal Award* for outstanding

performance. She received nine job offers on completing her business degree and she tells us that she uses the analytical and problem-solving skills she learned as a chemistry student in her work.

Shankar Rananavare, Ph.D., took up a position as Assistant Professor of Chemistry at the Oregon Graduate Institute of Science and Technology (formerly the Oregon Graduate Center) in January 1990. Shankar stopped by the department on his way to Beaverton, Oregon in January. He received his Ph.D. degree with Professor Larsen, did a one year postdoc at UM-Rolla, and spent five years in a similar position at Cornell until the end of last year.

William R. Shiang, B.S., (Ph.D. 1989) is now a research chemist with the Dow Chemical Company in Midland Michigan. 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 biochemistry 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., is Process Development Supervisor with National Starch and Chemical Development Corporation in Jacksonville, Ill. Chris recently was involved in an emulsion polymer plant start-up in S. E. Asia and spent two months in Australia, Singapore, Thailand and Malaysia. He recently married a colleague who is a petroleum engineering graduate from UMR and they were expecting their first child.

Jetty Travis, B.S., was recently featured in the Forest Park Community College publication *Science/Engineering/Technology News*. Jettie works as a laboratory chemist for the National Center for Drug Analysis' Drug Monitoring Branch in St. Louis.

1984-85

Floris Homan, B.S., (Ph.D. 1989) is Manager of the Organic Chemistry group at Senetek in St. Louis.

1985-86

Diane Bracollino, M.S., has a new position but is still with Monsanto in St. Louis. Diane is now in charge of the Monsanto Agricultural Products Company's Compound Acquisition Program.

Charles Jeffreys, M.S., recently moved to Monsanto in St. Louis from the Carboline Company. Charles

continues to take courses in the department. He is also doing some research with Professor Bill Welsh.

Ravi Kumar, Ph.D., is now a post-doctoral fellow at Louisiana State University with our former Washington University colleague Andy Maverick.

Becky Simeone, B.S., 1986, is now a technical support representative with P. J. Cobert Associates, Inc. in St. Louis. We saw Becky in the exposition at the 1989 ACS Midwest Regional Meeting where she was in charge of a booth for her company.

1987-88

Christy John, Ph.D., is now in the Radiopharmaceutical Chemistry Section at the George Washington University Medical Center in Washington DC.

Ko-Chung Lin, Ph.D., is now at Monsanto St. Louis. KC completed his degree with Mike Sworin and was a post-doc at Michigan in W. H. Pearson's lab until March 1st when he took up an appointment as Research Chemist in the Corporate Research Department at Monsanto.

Michael Provance, B.A., is now an Associate District Representative in the Water Management Division of Calgon in St. Louis. Mike filled in for us as interim Stock Room Manager during the summer of 1989.

Lihshue (Sherry) Chang, Ph.D., is a postdoctoral fellow at the University of Cincinnati with Professor Duetsch. She also serves as group manager during the period that her advisor is at Mallinckrodt in St. Louis. She is working on an environmental project involving ⁹⁹Tc analysis. She lives in Cincinnati with her husband Chet (see below).

Chitase Lee, M.S., works for Isotec (a Matheson company) in Dayton Ohio, and prepares isotopically labeled compounds.

Karen Wright, B.S., is Chief Chemist at the Schaeffer Manufacturing Company in St. Louis.

1988-89

James Baker, B.S., is now in the Ph.D. program in the department working in Professor Winter's laboratory. Jim holds the Union Electric Fellowship, the only such fellowship on the campus.

Kenneth Braig, B.S., is with Sigma Chemical Company in St. Louis.

Susan D. Corey, B.S., is with Monsanto in St. Louis.

Greg Duncan, B.S., works in the Quality Control Lab at the Warner-Jenkinson Company in St. Louis. In the same company he often sees **Mark Riva B.S.**, 1979, (M.S., 1985) who works in process research.

James C. French, B.S., is with Mallinckrodt in St. Louis and is also enrolled in the MS degree program in the department.

Thomas W. Thompson, B.A., is with Calgon in St. Louis as a Technical Service and Sales Representative.

James R. Wheatley, B.S. is now with Mallinckrodt in St. Louis. Jim served as Stockroom manager for seven years in the department.

1989-90

Minren Lin, who completed all the requirements for the Ph.D. last Fall, but who will formally graduate in May 1990, is doing postdoctoral research at Penn. State University with Professor Senn.

Careers in Chemistry - A Workshop for High School Students sponsored jointly by the Chemistry Department and the St. Louis Section of the American Chemical Society was held last April. Approximately 400 students participated in the function in which practicing chemists described what they do in their careers and encouraged the students to plan careers in chemistry.

All the speakers in the program were UM-St. Louis alumni except for the those who gave the two demonstrations, one by our glass-blower Bob Cabaniss, and the other a videotape of a program in chemical safety developed by the Technician's Affiliate Group of the local ACS Section. Chairs for the concurrent section were Drs Armbruster and Barton and the other speakers were:

Don Hesse, B.S., 1983, who is currently in our Ph.D. program. Don described life as an environmental analytical chemist. He has a part-time job with Meta-Trace in St. Louis.

Jettie Travis, B.S., 1985, described life as a pharmaceutical chemist. Jettie is with the National Center for Drug Analysis in St. Louis.

Gregory Hayward, B.S., 1972, described his work as a scientific and hospital equipment representative with Ely Lilly and most recently as sales manager for Homedco Homecare company.

Pauline Bellavance, Ph.D., 1977, described a career in teaching. Pauline is Associate Professor of Chemistry at Fontbonne College.

Harold R. Messler, B.S., 1970, is always in great demand as a speaker on forensic chemistry. Harold is Chief Criminalist in the St. Louis Metropolitan Police Department and a nationally known expert in the field.

Phyllis R. Bennett, M.S., 1979, described life as a research chemist. Phyllis works for Ralston Purina's subsidiary in St. Louis, Protein Technologies. Phyllis described, in addition to her work, opportunities for women in chemistry and also for women returning to the work-force after raising a family.

The whole function, which was arranged by Drs Armbruster, Garin and Miller, was a great success, the kids seemed to appreciate the presentations and it reflected very well on your Alma Mater.

American Society for Nuclear Medicine

The annual meeting was held in St. Louis in June 1989. There were several of our graduates at the meeting. **C.W. (Sam) Somawardhana, Ph.D.**, 1982 had come all the way from Riyadh, Saudi Arabia, to attend the meeting. **Sherry Chang, Ph.D.**, 1988, who is a postdoc at the University of Cincinnati was there as were **Dennis Wester, B.S.**, 1971, **Christy John, Ph.D.**, 1988, and **Bill Neumann, Ph.D.**, 1988, who coauthored two papers and two posters at the meeting.

Mallinckrodt Reception

A reception was held for Mallinckrodt employees who are UM-St. Louis alumni on Monday February 26. There are 57 alumni who work at Mallinckrodt, 29 of those received degrees from the chemistry department. The reception was a great success with several Senior Mallinckrodt officials, faculty members and other University personnel present. The function was arranged by Kathy Osborn, Director of Alumni and Constituent Relations and **Lloyd Hill, B.S.**, 1967. Lloyd is an Alumni Agent but unfortunately the

demands of his job precluded him from attending the function. Present were Gerard R. Beasley, B.A., 1985, James C. French, B.A., 1989, B.S., 1990, William Z. McCarthy, B.S., 1976, Ph.D., 1984, William L. Neumann, Ph.D., 1987, Mark H. Owens, B.S., 1976, MS., 1981, John J. Taylor, B.A., 1978, Steven Villasenor, B.S., 1975, Richard Wisneski, B.S., 1976, James R. Wheatley, B.S., 1988, and Randy Willheim B.S., Educ/Chem 1988.

Graduates 1989

May 1989

Humayan Ateeq Ph.D.
James A. Baker B.S
Kenneth Braig B.S
James C. French B.A
Fatima Ghasedi MS
Floris Homan Ph.D.
Craig Lewis B.S
Russell Moutray MS
James G. Murphy B.A

Aug 1989

Barbara Berglund MS
Steven L. Lawrence Ph D
James C. French B.S
Thomas R. Lueken B.A

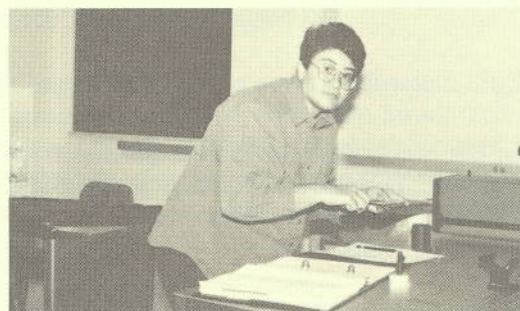
Dec 1989

Katherine H. Carr MS
Brent R. Cole MS
M. Meisinger B.A
James G. Murphy B.S
David J. Schulte B.A
Yong Yang MS

Facilities

Last year we provided a up-date on the new building and some details of the instrumentation we were hoping to acquire. The occupation and installation of equipment and facilities is now almost complete. We were fortunate to obtain some equipment funds through the construction budget and to make some very timely purchases. For example we purchased two Hitachi UV-VIS spectrometers, one for use in the undergraduate laboratories, and the other for research. We received, mostly through the efforts of Tom Solsten (B.S., 1976), a Finnegan-MAT 311A double-focussing mass

spectrometer. We have separately purchased ancillary equipment including a data station, cryocooler etc., and Joe Kramer is currently setting up the system. We also added a general purpose capillary gas chromatograph, for use in conjunction with the GC-MS, and other applications. This is the first new GC we have purchased for general use since the 1960s. We have had to rely, and for many things continue to do so, on gifts of surplus equipment from industry - obtained often through your efforts. We purchased an FT-IR spectrometer for research. The latter complements the system we purchased last year for use in the undergraduate laboratories. The Xray Diffractometer was completely refurbished. We have also purchased some oscilloscopes and other electronics test equipment for use primarily by David Herod our new electronics technician.



Nursen Coruh adjusts laser in Dr. James Riehl's Laboratory

The number of computers in the department continues to grow and the recently installed VAX network is rapidly becoming over-utilized and discussions are underway concerning its replacement or substantial up-grading. Plans for the new seminar room are almost final although we still have to raise about \$15,000 to complete the project. Some of the necessary funding came from the Science Complex equipment fund. We were also able to provide substantial funds towards the cost of setting up Dr. O'Brien's laboratory and some also towards Dr. Spilling's set up costs. Finally we have been able to replace more equipment in the undergraduate labs including new centrifuges for the qual. lab. (Chem 12) and an Apple Computer for chemical education.

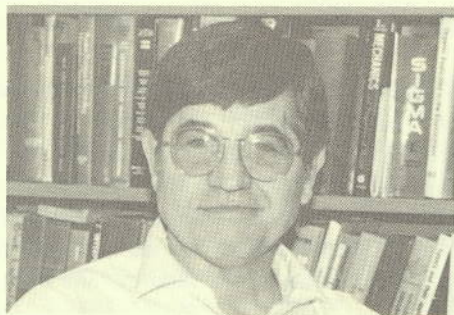
The Faculty

Gordon K. Anderson wrote a chapter on Palladium and Platinum Organo-metallic chemistry for the book "*The Chemistry of the Platinum Group Metals - Recent Advances*". He was a Mid America State Universities Association Lecturer for 1989-90 and visited Britain in summer 1989 to continue collaborative research with Dr. Ronald Cross of the University of Glasgow. Gordon

continues as Director of Graduate Studies for the department and has a very productive research program leading the department in publications in the latest ACS *Directory of Graduate Research*.

Charles W. Armbruster is still a very popular teacher and continues to be the College of Arts and Sciences Pre-Medical Profession Advisor. He maintains the image he has developed over the years by driving a bright red convertible Maserati.

Lawrence Barton is in the first year of an unprecedented fourth three-year term as chairman of the department. He is recruiting for a postdoctoral fellow funded through grants from the Monsanto Company and the Missouri Research Assistance Act. He expects to attend the VII International Conference on Boron Compounds in Poland and the Second Annual Boron-USA Conference to be held in North Carolina, both this summer. He continues to write the boron hydride chapters for the *Gmelin Handbook of Inorganic Chemistry*.



Dr. James Chickos

James S. Chickos continues his research on chiral organo-deuterium compounds and on the measurement and theoretical prediction of thermal properties of organic compounds. His research group now includes, one postdoc, three doctoral students and two thesis masters students.

Joyce Y. Corey will be giving one of the symposium lectures in the 1990 F. S. Kipping Award in Organosilicon Chemistry Symposium. The lecture is entitled "Formation of Silicon Oligomers". Joyce spent a productive 9 weeks last Spring as a visiting scholar supported by CNRS and presented 5 seminars at various universities in France. She began the background work on a review on dehydrogenative coupling of hydrosilanes which will be published this summer in *Advances in Silicon Chemistry*. She will be presenting 3 papers at the International Organosilicon Symposium in July in Edinburgh, Scotland.



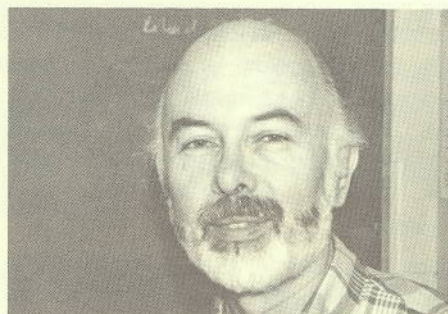
Dr. Joyce Corey

Valerian T. D'Souza now has a research group comprising five graduate students. His research program on cyclodextrin-based artificial enzymes is supported by grants from Mallinckrodt Inc., the American Chemical Society-Petroleum Research Fund, and the Missouri Research Assistance Act.

David L. Garin continues as Interim Director of the Center for Science and Technology. Dave was recently appointed to the Missouri Commission on Global Warming and Ozone Depletion by the Speaker of the House of Representatives.

John L. Gutweiler is in his nineteenth year as an adjunct faculty member teaching analytical and introductory chemistry. He continues his part-time work in the summer working for the wire services at Busch Stadium and is getting nervous about the possible delay of the baseball season.

Harold H. (Hal) Harris has just had a paper appear in *J. Phys. Chem.* on "Chaotic Dynamics in HCN". He and his students are currently studying chaos in the high-energy vibrations of acetylene. He will have a review of software appearing in a forth-coming issue of the *Journal of the American Chemical Society*. Hal has judged the Monsanto/Post-Dispatch Science Fair for 13 years. He still runs, but only 25-30 miles per week mixed with a little tennis and attempts to intimidate his faculty colleagues on the racquetball court.

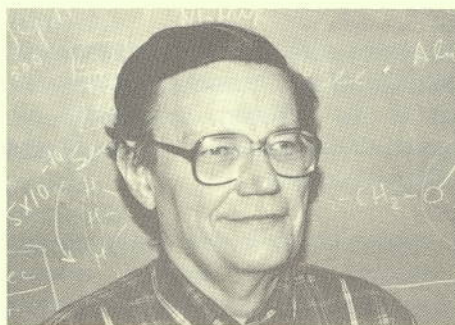


Dr. Harold Harris

Wesley R. Harris has now established himself and his research program in the department. In addition to the work supported by the National Institutes of Health and

the Department of Energy, he received funding through the Missouri Research Assistance Act and is currently discussing some collaborative work with colleagues at Mallinckrodt in St. Louis.

M. Thomas Jones, Deputy to the Chancellor, continues to remain active in research wherein he and his students are investigating organic and organometallic based synthetic metals. His research program continues to generate a healthy publication record - Tom had 10 papers listed in the 1989 issue of the *ACS Directory of Graduate Research*. He has recently been appointed a Member of the Board of Directors of the St. Louis Technology Center and a voting alternate on the Board of Directors of the Missouri Advanced Technology Institute.



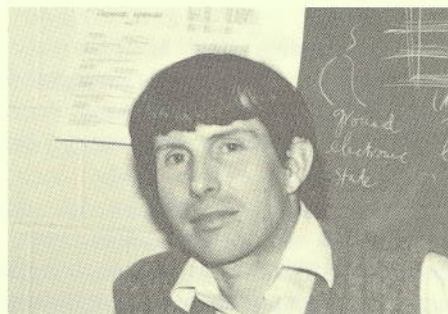
Dr. David Larsen

David W. Larsen is active in the company Chem Char he formed with a colleague from UM-Columbia. They have developed a method for removing hazardous wastes from industrial and other effluents. Dr. Larsen presented a symposium lecture on "Ozone-Induced Lysis of Vesicles by ^{31}P NMR" in the symposium on High-Resolution NMR of Solids at the Midwest Regional Meeting of the ACS in St. Louis in the Fall.

Jane A. Miller was featured in the publication of the proceedings of the ACS Symposium "Lavoisier and the Chemical Revolution" in the *Bulletin for the History of Chemistry*. Dr. Miller organized the symposium and wrote the introductory remarks for the publication. She is planning the Symposium on *Women in Chemistry, the Past, Present and Future* for the upcoming ACS meeting in Boston. The featured lecturer in the symposium will be Dr. Dorothy Hodgkin, winner of the Nobel Prize in chemistry for her pioneering work in chemical crystallography.

Robert W. Murray was named the winner of the 1989 Midwest Award of the American Chemical Society. Dr. Murray came back to St. Louis for the award presentation at the Midwest Regional Meeting in St. Louis from Cork in the Republic of Ireland. It was just announced that Dr. Murray will receive the University of Missouri *Presidential Award for Research and*

Creativity. His research program continues to enjoy substantial external support from the NIH and the ACS-PRF.



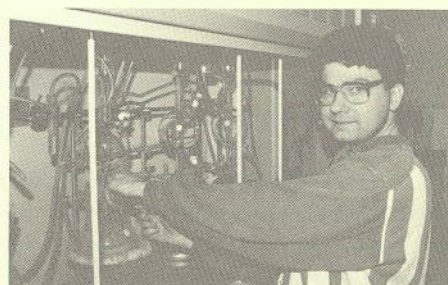
Dr. James O'Brien

James J. O'Brien has recently has taken delivery of a high resolution monochromator system and has had his Argon ion laser installed. He is now assembling his intracavity laser spectrometer and ironing out the wrinkles in the system. Initially he plans to use this system to investigate gas phase processes involved in the chemical vapor deposition of diamond and diamond-like carbon films.

Nigam P. Rath, joined the faculty as Research Assistant Professor and the person in charge of the Xray diffraction Facility. Dr. Rath received his Ph.D. from Oklahoma State University and did postdoctoral research at the University of Notre Dame. He has been busy getting the upgraded system up and running and has solved many structures in the nine months he has been with us.

James P. Riehl was awarded both an NSF grant and a NATO grant in support of his continuing collaboration with colleagues in the Netherlands. He is currently looking to fill a postdoctoral position supported by NIH and University Weldon Spring funds. Dr. Riehl very ably served as interim chairman of the department during a two-week period when the chairman was indisposed.

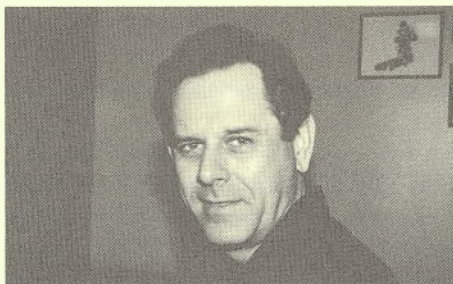
John Schreifels our former colleague who is now on the faculty at George Mason University in Fairfax Virginia, is editor of their alumni bulletin which is patterned after this one.



Dr. Christopher Spilling in his new Laboratory

Christopher D. Spilling is busy setting up his lab and establishing his research program. He has recruited two graduate students and received two internal grants in support of his research project "Chiral Phosphonates and Phosphoramides in Stereoselective Bond Formations". Chris is getting married this summer.

Michael Sworin is now a research chemist in the Central Research Department of the Dupont Co. in Wilmington Delaware.



Dr. William Welsh

William J. Welsh continues to develop a very well-funded research program involved in molecular modeling and computer graphics studies of biological molecules and polymers. In addition to previous funding from the NIH, and the Monsanto Company, this year he received grants from the American Chemical Society-Petroleum Research Fund, and the Missouri Research Assistance Act. Dr. Welsh has two postdoctoral fellows in his research group and three graduate students. It was recently announced that Professor Welsh has been awarded tenure and promoted to Associate Professor.

Rudolph E. K. Winter received a grant from the Missouri Research Assistance Act to match funds from Monsanto to support his research in the study "Chemical Studies Related to Bursaphelenus Xylophilus Caused Rapid Pine Wilt", in which he collaborates with Professor Robert I. Bolla, formerly of our biology department and now chair of the St. Louis University Biology Department.

New Faculty

Dr. Keith Stine will join the department in the Fall. Dr. Stine is a physical chemist and he replaces Dr. Jones who is now formally an administrator although he continues to have an active and productive research program. Dr. Stine received his BS degree from Fairleigh Dickinson University and his Ph.D. degree from MIT where he worked with Dr. Carl Garland. You may recall that Dr. Garland co-authored the text we have used for years in the physical chemistry laboratory. Dr. Stine is

currently a postdoctoral fellow at UCLA where he is working with Professor Walter Knobler. His research interests are in the influence of molecular structure on surface and interfacial behavior of amphiphiles and liquid crystals. Areas in which he intends to develop research programs here are phase transitions in condensed matter, liquid crystals, monolayers, amphiphilic systems, critical phenomena, surface science, pattern formation and polymers.

We have also just heard that **Dr. Lee Brammer** has accepted our offer of appointment as assistant professor. Dr. Brammer is an inorganic chemist and replaces Eugene Corey. He was born in England and did his undergraduate and graduate work at the University of Bristol. His dissertation research was carried in Dr. Guy Orpen's laboratory. He came to the US to take up a NATO Postdoctoral Fellowship in the laboratory of Professor E. D. Stevens at the University of New Orleans. He is currently a postdoctoral fellow at Brookhaven National Laboratory with Dr. T. F. Koetzle. His research interests are in experimentally determined electron density distributions in a range of inorganic systems including donor-acceptor interactions in molecular solids, interactions between transition metal and hydrogen atoms, and transition metal clusters. He is also interested in structure correlation and statistical methods for analysis of crystallographic results.

The Staff

We neglected to include this section last year so this is an update of the information we provided in 1988.

Betty Eshbaugh, Administrative Secretary, continues to be mainstay of the office staff. Betty recently converted all of the grants accounts to Lotus.

Bob Cabaniss, Scientific Glassblower, is now settled in his newly expanded quarters on the fourth floor of Benton Hall next to the Physical chemistry Lab.

Ted Windsor, Senior Electronics Technician, is similarly settled in the new shop on the first floor of the research wing. Ted claims to have the best view in the department - onto the patio of the main entrance to the new building.

David Herod, Electronics Technician, joined the staff last May. Dave received a bachelor's degree in physics from UM-St. Louis and a MS degree from Texas Tech University. His role is to service the NMR, computers and other modern equipment in the department.

Joe Kramer, Electronics Technician, continues to run the Mass Spectrometry lab except that it is now a substantially bigger operation than ever before. Joe and Ted Windsor did yeoman work in helping the department move into the new laboratories last year.

Randa Schneider, formerly a Clerk Typist, was promoted to Secretary last year. Randa is becoming quite an expert in the use of computer programs used to draw chemical structures and other graphics.

Sylvia Stephens, Secretary, is now permanently with the department. Sylvia is the expert on our word processing program *Microsoft Word* and does most of the manuscript typing.

Jim Wheatley, Stockroom Manager, resigned when he graduated in the summer of 1988 to take a position at Mallinckrodt. He was replaced with David Darner who held the position for one year. Mike Provance filled in for us for six weeks when he was between jobs, and Mike Rhoades held the position for six months until very recently. We are currently recruiting for a replacement and in the interim, Sal Ciaramietaro, an undergraduate chemistry major, is interim manager.

Contributions 1989-90

\$500.00 and above

Dorothy C. Greco
Lloyd P. Hill*
Joseph O. Muo
Virginia M. Houserman
Gregory W. Przygoda*
UM-St. Louis Alumni Association

\$250.00-\$500.00

C. W. Somawardahana

\$100.00-\$249.00

Phyllis R. Bennet
Barbara (Willis) Brown
Chitase Lee and Sherry Chang
Michael Finkes*
John J. Taylor
Ross W. Larson
Harold R. Messler
Mark H. Owens*
Dennis Parazak

\$50.00-\$99.00

Phillip V. Asaro
Donald M. Kaesser
Charles V. Tatosian
Dennis W. Wester

\$25.00-\$49.00

Dorothy M. Bean
Daniel Breyfogle
C. Michael Drain
Mark Knollman
Ko-Chung Lin
Greg Lumetta

* Includes an employer's matching contribution.

1989-90 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 Dr. David Henton (Class of 1967, see below) and was followed by a reception to honor the class of 1989 and the awardees and their family and friends. This year, with the help of an "Aid to Education Award" from the Monsanto Company we are establishing approximately 10 annual "Books and Educational Materials Scholaships" to sophomore chemistry majors. The idea is to recognize good performance and need and to encourage more students declare themselves as chemistry majors. The funds will, 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 M. Alicia Reaka, a biology major, last year. Alicia 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 James Murphy. Jim 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 Michael Crowley. Mike was also the 1989-90 *Brunngraber Fellow*. He was selected by the faculty to receive an \$1,100 honorarium for the academic year. Mike chose to carry out his research in the laboratory of Professor Wesley R. Harris. 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 this fund which honors the late Eric G. Brunngraber.

The 1988-89 *Alan F. Berndt Outstanding Senior Award* went to Alicia M. Beatty. The *American Institute of Chemists Medal* also goes to the outstanding senior. Alicia was named the 1987-88 Outstanding Junior two years ago. Alicia received her B.S degree and is now a Ph.D. student at Washington University and was recently married Jerry Rhoady who works for KWMU, our radio station.

Graduate

The *Mallinckrodt Fellowship* went to Steven Fallis in 1989-90. Steve is a native of Glasgow, Scotland and a graduate of the University of Glasgow. He entered the Ph. D. program in January 1986 and is working in the laboratory of Professor Gordon K. Anderson. The 1989 *Alumni Summer Graduate Fellowship* went to Dee Lange, and Young June Cho received a *Graduate School Summer Fellowship*.

Alumni

The 1989 *Distinguished Alumni Lecture* was given by Dr. David Henton who received a B.S. degree in the first graduating class in 1967 when he was judged by the faculty to be the outstanding student. Dave is now a Senior Associate Scientist in the Designed Thermoplastics Research Laboratory of the Michigan Applied Science and Technology Laboratories of the Dow Chemical Company in Midland Michigan. He has been with Dow since 1973 when he received a Ph.D. degree in organic chemistry from the University of Kansas. The title of his presentation was "The Chemistry of Styrene Polymerization".

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.

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, the Award Account which funds the Alan F. Berndt Senior Outstanding Senior Award and provides expenses for the

other undergraduate awards. Recently 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. Thus we hope 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 recieved 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 choose not to make a contribution please complete the "Information Update". Information about your successes is very important to us.

Editor-L. Barton

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!/: _____

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UM-St. Louis Chemistry Alumni Fund

Enclosed is my contribution of \$ _____

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

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

IF YOU LIVE OUT OF TOWN, WOULD YOU BE INTERESTED IN ATTENDING AN ALUMNI RECEPTION, IF GIVEN ENOUGH ADVANCE NOTICE? ____ Yes ____ No