



UMSL CHEMIST

Department of Chemistry

University of Missouri-St. Louis

Volume 7

March 1989

Chairman's Message

I thank you all for the very many nice comments I have received about the *UMSL CHEMIST*. I hope you will continue to feed us information that we can include in this annual compilation.

This has been a bittersweet year for the chemistry department. We lost our good friend and colleague Eugene Corey on Thanksgiving Day. There is a separate section devoted to this tragedy later. We have to continue with our work in spite of such setbacks but it has been difficult. The large crowd that attended the Memorial Service held in Gene's honor on Monday, November 28, 1988 at Drehmann Harrel down Natural Bridge Road from the campus, was a fine tribute to a teacher, scholar and friend who had affected so many lives positively. On the positive side, Robert Murray underwent successful heart bypass surgery during the same period. We are pleased and relieved that Dr. Murray is back in business again.

The academic year began somewhat poorly as Governor Ashcroft withheld 3% from the University budget. Such frugality was also reflected in the fact that we only received one half the funds slated for "Eminence". On the other hand we added two faculty members, Jim O'Brien as replacement for John Schreifels, and Wes Harris as the second new appointment as part of the plan to achieve "Eminence". We are now in the new building and the remodeling of Benton Hall is expected to be completed within one month. There are some additional hoods, etc., to be added to the new labs but the project is almost over. The excellent new laboratories are what we have been waiting for and will put us in a very strong position to meet the lofty goals we have set for the department. If anyone wishes to see our new facilities, we would be happy to arrange tours. The dedication will take place in the Winter 1990 semester and all of you will be receiving invitations.

We have been quite successful in attracting external funds for equipment and thus have been able to meet our charge of matching Science Complex equipment



The Science Complex from East of Bugg Lake

funds. We have raised \$153,000 during the last year and matched it with \$131,000 from the Science Complex budget. Indeed we have seen remarkable success in the National Science Foundation's Chemical Instrumentation Program, receiving four such awards in the last four and one half years. We are currently awaiting word that the Science Complex equipment funds have been released so we can place some orders. We expect about \$100,000. The eminence funding has allowed us to make some improvements in undergraduate equipment as well as in research equipment. This is described later.

Faculty research productivity continues to rise. During the 1987-88 year we raised \$401K in external funds, published 50 papers and this year looks as though it be even better than last. Our undergraduate enrollment continues to drift downward in what is clearly a national trend away from science. We graduated only 14 bachelors degrees in 1987-88, the smallest number since our first class in 1967. On the other hand we graduated 7 Ph.D.s and 4 M.S. degrees. We are taking steps to recruit undergraduates more actively in an effort to get ahead of the swing back towards science (which of course is essential if the country is to compete with the Far East and Europe).

The summer saw a most successful undergraduate research program funded through an NSF Research Experiences for Undergraduates award as well as with funds from the Monsanto Company. Twelve students, including

six UM-St. Louis students and one each from Chicago, Northern Iowa, and Ohio Wesleyan Universities and Westminster, Wabash and Knox Colleges, spent the summer working in the laboratories of Professors Anderson, D'Souza, Barton, Garin, Harris, Riehl, Welsh and Winter. Our NSF-REU grant was not renewed but we are trying to raise enough money to run a small program this summer.

The campus continues to make great progress under the leadership of Chancellor Barnett. Despite many obstacles, the proposed engineering program is closer to becoming a reality. The current proposal would utilize the facilities at Washington University. There is much area support for the proposal but, as usual, some of our colleagues in Rolla and Columbia are upset. The program would offer electrical and mechanical engineering courses in the evenings. Several studies have indicated that there are several hundred technicians and scientists working in St. Louis area companies who would enroll in such a program. The program is directed at the "non-traditional" student. In St. Louis we know all about such students - most of you were non-traditional students in that you worked while attending school. Others would deny that you exist!

Like the Science complex, the external phase of the library construction is also nearing completion. I recently received a briefing on the new facility. One important feature for us is that the journals will be separate from the books and stacked in a different area. There will be adequate display cases for unbound journals. Many of you will know that the facility has been particularly cramped recently. There will also be a spiral staircase in the center of the existing facility to conserve space.

Last year the legislature appropriated funds for another new building, a Computer Science building, which will be located adjacent to SSB and Lucas Hall. Our colleagues in Physics and Biology now are starting Ph.D. programs making a total of 5 including ours and those in Political Science and Psychology. Clearly we are beginning to resemble the comprehensive institution that we have been building for 25 years.

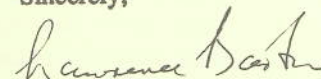
We have added a new faculty member who will start in the Fall. Christopher Spilling, who hails from the mother country, is a synthetic organic chemist. Next year, in addition to seeking replacements for Eugene Corey and Tom Jones (who is now Deputy to the Chancellor), we hope to be seeking the first of two senior positions to complete the expansion which is part of the "plan to achieve eminence". Last summer, incidentally, we updated our department brochure. It describes the department as it was then. If any of you would like to receive a copy please, indicate that when you return the "Information Update".

Again we encourage you to keep in touch with us. Let us know about your successes, especially the professional ones. The more successful you are, the more successful we are and the end result is that as our reputation continues to grow so does the value of your degrees. If you are looking for employees, or looking for employment, please let us know that too. We are not always able to help but in many instances we can. Several of you may be a phone call away from that position you have been seeking.

Finally we hope to see as many of you as possible at the up-coming reception on April 7 at the Alumni Center. Although the dedication of the Science Complex will not take place until next year, we will arrange to give tours early in the evening on April 7, if there is interest. If you are ever in the area please stop by the department. You will see a rapidly changing and growing campus. Even Bugg Lake is to be restored to its former beauty, although it will be 35% smaller.

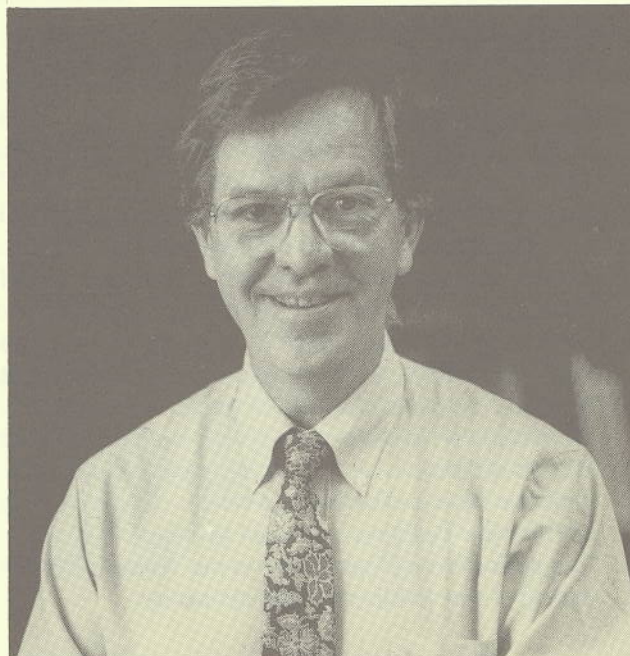
We wish you all the very best for the coming year.

Sincerely,



Lawrence Barton

Professor and Chairman



Professor Eugene R. Corey 1935-1988

EUGENE RAY COREY 1935-1988

The following obituary appeared recently in Chemical and Engineering News and a similar one appeared in the St. Louis Post-Dispatch on Sunday November 27.

Eugene Ray Corey 53, Professor of Chemistry at the University of Missouri-St. Louis, died suddenly early Thursday morning, November 24, at his home in Bellerive, MO, as a result of a ruptured abdominal aneurysm.

Dr. Corey had been a member of the faculty at UM-St. Louis since 1969. He had taught previously at the University of Cincinnati and as an instructor at the University of Wisconsin-Madison.

He was born in Oregon City, Oregon and was educated at Willamette University in Salem, Oregon, and the University of Wisconsin-Madison where he received BS and Ph.D. degrees in chemistry, respectively.

Dr Corey was well known as an excellent teacher and was awarded the Amoco Foundation Good Teaching Award at UM-St. Louis in 1976. His research was in structural chemistry and chemical crystallography and he had published about 40 research papers in this area. He was perhaps best known for his dissertation research with L. F. Dahl at Wisconsin, wherein he completed the first structure determination of a large transition metal carbonyl cluster molecule, $Rh_6(CO)_{16}$. This article: Corey, E. R.; Dahl, L. F.; Beck, W. *J. Am. Chem. Soc.*, 1963, 85, 1202, has become a classic in the field.

Dr. Corey was a prominent member of the UM-St. Louis campus community, serving twice as secretary of the University Senate and once as secretary to the Faculty Council.

He is survived by his wife, Joyce, who is Professor of Chemistry at UM-St. Louis; his mother Christine Corey, of Oregon City, Oregon; and a sister, Carol Teske, also of Oregon City. He joined the ACS in 1961.

A memorial service, on Monday 28 November 1988, was attended by over 200 friends and colleagues at the Drehmann Harrel Funeral Home on Natural Bridge Road. Hal Harris arranged a most appropriate service. The theme was musical and the program is included below:

Prelude: Aria from Goldberg Variations
J. S. Bach (Charles Metz - Harpsicord)

Opening Remarks: Harold H. Harris

Song: Komm, sußer Tod
J. S. Bach (Carole Gaspar - Soprano)

Remarks by Lawrence Barton

Song: An Die Musik
F. Schubert (Charles Armbruster-baritone)

Reading: Ecclesiastes 3:1-13

Song: Abendenfindung
W. A. Mozart (Carole Gaspar)

Remarks by Peter P. Gaspar

Instrumental: Goldberg Variation 25
J. S. Bach (Charles Metz)

Remarks by Harold H. Harris

Song: Largo from the opera Xerxes
G. F. Handel (Charles Armbruster)

Remarks by James Neal Primm

Postlude: Second movement of the Italian Concerto
J. S. Bach (Charles Metz)

Gene was cremated and his ashes will be interred in Bellfountaine Cemetery in north St. Louis. Joyce asked that any contributions be made to the Missouri Botanical Garden or Willamette College. The University has established a memorial fund which will be used to plant a grove of trees adjacent to Bugg Lake. Contributions to the fund should be sent to the University Relations Department.

Alumni Information

1966-67

Thomas Deuber, B.S., presented a seminar in the department in February, 1989, on sensitizers for photopolymerisation. Tom is a Research Associate in the Electronics Department at Dupont in Wilmington, Delaware and his presentation was extremely well received.

David Henton, B.S., recently visited the department with his wife and son, Mike, who is a freshman chemistry major at UM-St. Louis. Dave was recently named 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 received his Ph.D. degree at the University of Kansas in 1973, after a period interrupted by the draft, and joined Dow in 1973. He was promoted to Associate Scientist in 1984 and has submitted 27 patent disclosures.

Lloyd Hill, B.S., has been promoted to Research Manager at Mallinckrodt. He leads a group involved in Narcotics Chemistry and his group consists of 10 people including several UM-St. Louis chemistry graduates.

1967-68

Michael D. Hasser, B.A., was featured in *People in Business* in the St. Louis Post Dispatch recently. Mike was promoted to Vice-President for Operations of the Carboline Company in St. Louis.

Vernon P. Koziatek, B.S., is employed by the US Government Department of the Army in the Toxicology Section of the Department of Pathology at Eisenhower Army Medical Center, in Fort Gordon, Georgia. Vern received an M.B.A. from Augusta College, Augusta, Georgia in 1976.

Raymond Novak, B.S., about whom we wrote last year, received one of five Outstanding Alumni Awards presented last June at the Annual Meeting of the UM-St. Louis Alumni Association. During his visit to the campus, Ray presented a seminar to the department entitled: "Metabolism of Drugs".

Joseph Patane, B.S., who now works for the Aviation Systems Command, in North St. Louis, is planning to complete his MBA, part-time, at UM-St. Louis.

1968-69

Lee Gori, B.S., became a member of our Advisory Council Steering Committee last year and in this role he persuaded the philanthropic arm of his employer, Emerson Electric Co., to contribute \$1,000 to the Colloquium Room Fund (see below for information about this fund-raising project). Lee has been busy recently on a project involving the development of a very powerful telescope.

Douglas G. Nuelle, B.S., an orthopedic surgeon in Port Charlotte, Florida, was recently honored for his development of a new arthroscopic surgical procedure for the treatment of temporomandibular joint disorders. The work was presented at a meeting of the Angle Orthodontic Society in Chicago. Doug, and a colleague, performed the world's first arthroscopic mandibular surgery in Port Charlotte in 1985. The new technique involves the use of a CT scanner and reduces the operation to an out-patient procedure. The work was published in the Florida Dental Journal and the Journal of the Angle Society and given coverage in the local press.

Lawrence E. Payette, B.S., has been the Environmental Administrator for the Boeing Commercial Aircraft Company in Portland, Oregon, for the last four years. His job involves responsibility for the company's compliance with federal and state regulations. His 11 years experience with the EPA in Kansas City and Portland provided excellent experience for his current position. Larry is married to Barbara (Jensen) from St Peters, Missouri, and they have two boys, aged 10 and 9. Larry wrote a very warm letter to the department acknowledging the "incalculable benefits" imparted by the Chemistry Department. We certainly appreciate his comments.

1970-71

Sandy Asher, B.S., gave the first annual Distinguished Alumni Lecture in May 1988. Sandy lectured on "Giant Polymer Crystals: New Optical Devices which Bragg-diffract Visible Light".

Dennis Wester, B.S., about whom we reported last year, is with NeoRx, Inc. in Seattle. Dennis is a Senior Scientist involved in labeling antibodies with radionuclides. He has recently taken up translation of Russian Journals into English for Plenum Press in his spare time.

1971-72

Larry Legler, B.S., continues his private medical practice in Independence, Missouri, where he has been a family physician for 10 years.

W. Steve Tait, B.A., is employed by S.C. Johnson & Sons Inc. (Johnson's Wax) in Racine, Wisconsin, as a Senior Engineer. Steve manages the Corrosion Research Laboratory in the Package Development Department. He received his Ph.D. in Materials Engineering from the University of Wisconsin-Milwaukee on May 14, 1988. He presented an invited paper at the ACS/CIC meeting in Toronto, in June 1988, and will present another at a conference on corrosion protection coatings in Cambridge, England, in April, 1989. He was also awarded the S.C. Johnson and Sons Inc. Technical Merit Award for his research on metal container corrosion.

1972-73

John H. Reutner, B.S., is employed by McDonnell-Douglas - McAir as a Senior Engineer-Advanced Design.

Dennis Anglim, B.A., is a self employed dentist and has had his office in the Westport area since 1979. Dennis graduated from UM-Kansas City School of Dentistry in 1978. He is married to Marta (Colantino) Anglim (B.A. - Biology UM-St. Louis). They have three children aged 9, 6, and 1 1/2.

1974-75

Dan Claudy, B.S., is Manager, Technical Services, for Mallinckrodt, Inc. in Paris, Kentucky. Dan received a MBA in 1983. His activities are associated with product labeling, CGMP compliance, complaint and service requests, and replying to technical questions from Mallinckrodt customers.

Roberta Farrell, B.S., is Executive Director of Research with Repligen Sandoz Research Corp. She directs and manages the research and business matters of the joint venture biotech company between Repligen Corp. and Sandoz Ltd. "Birdie" is also busy with a young family.

Gregory P. Genova, B.A., is employed by St. Luke's in Wentzville, MO. in general internal medicine practice. He is a faculty member in the internal medicine training program at St. Luke's - St. Louis Regional Hospital. He was Chief of Internal Medicine for 1 year ending February 1988 at Wentzville Community Hospital, now Missouri Baptist-Wentzville. He was planning to be married on September 3, 1988.

1975-76

Phil Asaro, B.S., is employed by the Luthern Medical Center

as a family physician. He practices in the Soulard Neighborhood in South St. Louis. We recently ran into Phil and his wife at a Saint Louis Symphony Orchestra chamber music concert.

John Chaber, B.S., is with the Burroughs Wellcome Company in Greenville, North Carolina. He is a Research Group Leader in the Analytical Methods Development Laboratory.

Roger Grossman, B.S., is now located in San Jose, Costa Rica. He and his wife Vicki are performing missionary work for the Foreign Board of the Southern Baptist Convention. They are currently in language school learning Spanish and then they will learn Kekchi. They were scheduled to go to Guatemala to do mission work among the Kekchi Indians.

Steven Silverstein, B.A., recently donated some laboratory materials to the department from his father-in-law's former company. Steve has been with Consumer Programming Incorporated in St. Louis for several years. He is Vice-President and territorial manager in the studio division. He worked with Fox Photo on a silver recovery project for two years after graduation. He received a M.B.A. in marketing from UM-St. Louis in 1977.

Jeffrey B. Wheatley, B.S., continues to develop chromatography techniques for the Rainin Company in Berkeley, California. Jeff will present a paper at the upcoming Pittsburgh Conference in Atlanta.

1976-77

Victor Granat, B.S., Chief Criminalist at the St. Louis County Crime Lab, recently donated a used GC-MS to the department (see later). Vic is looking forward to moving into new laboratories soon.

1977-78

Jeffrey T. Davis, B.S., (M.S. 82) is now with Hewlett Packard in the Customer Service - Analytical Instruments Section. He is presently involved in installation and service of GCs and diode-array UV-Vis spectrophotometers. Jeff was previously with Sigma Chemicals Co., Diagnostics Section - also in technical service.

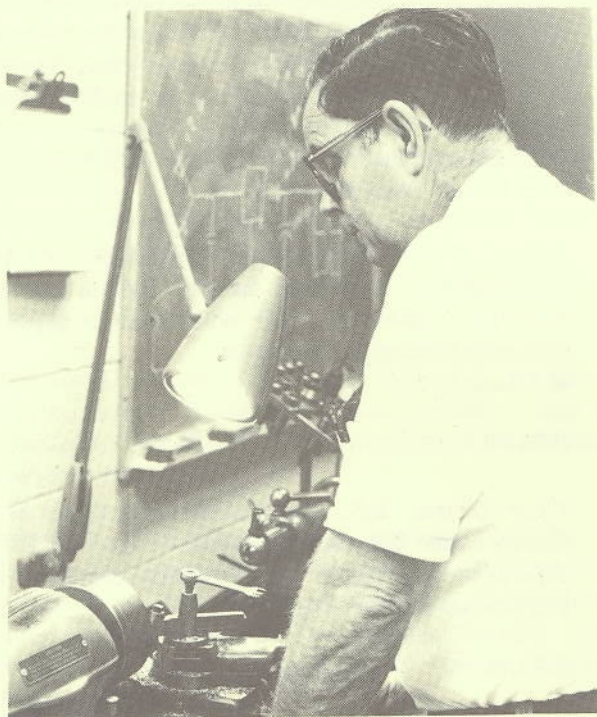
Michael D. Ennis, B.S., continues his work in Cardiovascular Disorder Research at the UpJohn Co. in Kalamazoo, Michigan. Mike recently published a paper in *Tetrahedron Letters* on 1,4-thiazanes as conformationally restricted analogs of the peptido-leukotrienes.

Mary Hitt, B.S., is now at a post-doctoral fellow at McMaster University in Hamilton, Ontario, supported by a Post-doctoral Fellowship from the National Cancer Institute of the NIH. Her current research centers on the mechanisms of transformation by DNA tumor viruses.

Russell Moutray, B.S., is now employed by Chemsico Inc. as the analytical chemist. Russ, who expects to receive his M.S. degree here in May, spent several years at Petrolite in St. Louis and left there in November, 1988.

1978-79

Joan C. Kunz, is now Assistant Professor of Chemistry at Augsburg College in Minneapolis. She received a Ph. D. from Wisconsin and we have seen several papers on her graduate work with Don Gaines and others from work she has completed since then.



Senior Electronics Technician, Ted Windsor, also serves as departmental machinist.

1979-80

Debora F. Bergstrom, B.S., recently received her Ph.D. from the University of Michigan and now works for the Dow Corning Corporation in Midland, Michigan, in the Electronic Materials Research Department. Debbie and her husband Wayne have two daughters, Christina and Stephanie.

Vincent Chang, M.S., works for Syntex in Freeport, in the Bahamas, as a research chemist. Vincent received a Ph.D. from Duke University and was with Burroughs Wellcome for some time.

William E. Van Arsdale, B.S., (Ph.D. 1983) continues as chairman of the Chemistry Department at the University of Houston-Clear Lake. He is scheduled to present a paper at the ACS Meeting in Dallas this April on "Reactions of Mo(IV) and Mo(VI) Schiff Base Complexes with Hydrogen Peroxide".

1980-81

Marie (Militello) Davies, B.S., is Chief Chemist at the Schaeffer Manufacturing Company which is located in the Soulard area of St. Louis. We last saw her at a party at *Bill MaCarthy's* home, held in commemoration of his acquiring heat and running water at his renovated home in Lafayette Square.

1981-82

Mary (Peterson) Hays, B.A., is now in research at Anistech Company in Pittsburgh. Mary was previously doing post-doctoral work at the University of Rochester following the completion of her Ph.D. work at Washington University.

Susan Jansen, B.S., Ph.D. 1985 is scheduled to visit us in March. We understand Sue is making progress as an Assistant Professor at Temple University. We recently saw that she and Roald Hoffmann had a paper in *Surface Science* on "Surface chemistry of Transition metal Carbides: A Theoretical Study".

Gregg Lumetta, B.S., (Ph.D. 86), is now employed at the Oak Ridge National Lab as a postdoctoral fellow. Greg is studying solvent extractions of transition metal ions. He spent two years at the University of Texas Health Center and recently published a paper on "Lipid-soluble Antitumor Platinum Complexes" in *Inorganica Chimica Acta*, on work completed here.

Dennis Parazak, B.S., (MS 1987), continues to enjoy a productive research career at Petrolite in St. Louis. He recently coauthored a paper on "Hydrophobic Flocculation", which appeared in the *Journal of Colloid and Interface Science*.

Suzanne Saum, B.S., is a technical representative with Merck & Co. in St. Louis. Sue received her Ph. D. degree from Washington University last year.

James Timper, B.S., who was with the National Center for Drug Analysis in St. Louis, was recently promoted to Review Chemist for generic drugs with the agency and transferred to Rochville, MD-Washington, DC. We understand that Jim intends to complete his M.S. degree in math at Catholic University.

1982-83

Michael Drain, B.S., is now a post-doctoral fellow at the Rockefeller University in New York City, working on membrane biophysics with David Mauzerall. Mike received his Ph.D. at Tufts University, where he worked on Ni porphyrin chemistry with Barry Corden.

Debbie (Liebrecht) Hauser, B.S., is now with Sitex Environmental Inc.

Joseph Muo, B.S., continues his work in the Gastrointestinal Research Laboratory at St. Mary's Hospital in Clayton. He studies the biochemistry of Tripsins and Chymotripsins and continues to provide interesting updates to us on his research ideas.

Rajiv Banavali, Ph.D., is now a research group leader at the Rohm and Haas company in Houston. He is also an Adjunct Professor at the University of Houston-Clear Lake, teaching a course in oxidation chemistry. Rajiv did his doctoral work here with Bob Murray and postdoctoral work with Paul Bartlett at TCU prior to joining Rohm and Haas. We understand that Sudhir Agarwal, former post-doc with Dr Murray (1981-86), is also at Rohm and Haas.

Jerry Beasley, B.A., is a research chemist with Mallinckrodt, Inc. in St. Louis. He works in the medical special products group (Narcotics) and associated process support.

Dale Lanser, B.A., is Quality Assurance Manager for the Chemistry Department at Scientific Associates.

Judy Shih, B.A., graduated from UM-Columbia with a Ph.D. in biochemistry and is now a post-doctoral fellow at the University of Kansas Medical Center. Judy and her husband Henry Gu, who also has a Ph.D. from UM-Columbia in biochemistry, have a one year old child.

Suzanne (Mates) Mrad, B.S., is now in the MBA program at Washington University. Sue was a researcher at the McDonnell-Douglas Company between graduation and going to Washington University.

1985-86

Ravi Kumar, Ph.D., is now doing post-doctoral research at the University of Western Ontario in the laboratory of Professor Richard Puddephat. He and his wife Viji recently were blessed with a baby girl, Chandra.

Judy (Taylor) Logsdon, B.S., is a chemist at Anheuser Busch Inc. working in the Analytical Services Group. Judy is a member of the American Society of Brewing Chemists. She was married last year to Raymond Logsdon, a 1978 graduate of SMSU, chemistry/biology, who is employed by Ralston Purina Corporation in the Research Services Department.

Shari (Menefee) Keith, B.A., who continues at Washington University as a chemistry graduate student in Professor Moeller's group, reminds us that she has changed her name to Shari Keith.

Margaret (Whitlow) Rifleman, B.S., is employed by the University of Texas, Health Science Center at San Antonio as a Research Associate in the Biochemistry Department.

Janet (Braddock) Wilking, B.A., is a third year graduate student at Washington University. Janet married Bruce Wilking, Associate Professor of Physics at UM-St. Louis in June 1986.

1986-87

Alan Schneider, BS., is a second year graduate student at Iowa State University. He has chosen to work with Prof. Tom Barton, a frequent seminar speaker here. Alan was last heard preparing for his physical and synthetic organic preliminary exams (Fall 1988) and the preliminary oral exam (1989) for entrance to the Ph.D. program.

Tianhe(Tim) Zhu, M.S., now lives in Pomona, California with his wife Polly and son Ben. They have purchased a house and Tim is involved in running a GCMS for an environmental analytical company.

1987-88

Sherry Chang, Ph.D., spent a year as a post-doctoral Fellow at the Tulane University in New Orleans in the laboratory of Mark Fink, and is now a post-doc at the University of Cincinnati with Professor Ed Deutsch. Her husband Chitase Lee, M.S., 1988, works in industry near Dayton, Ohio.

Christy John, Ph.D., spent a year at UM-Columbia on a post-doc with Professor David Troutner and is now a Research Assistant Professor in the Department of Nuclear Medicine at the University of Pennsylvania in Philadelphia. At UM-Columbia, Christy co-filed a patent on a Tc labelled brain perfusion agent and at Penn he is working in a similar area. He and his wife now have a second child, a girl named Racheal, who was born in May 1988.

KoChung Lin, Ph.D., is now a post-doctoral Fellow at the University of Michigan working in the laboratory of William H. Pearson. *Humy Ateeq*, who recently visited KC, when taking up his post-doc position at Wayne State University, tells us that KC is working even harder than he did at UM-St. Louis. We find that hard to believe!

William L. Neumann, Ph.D., spent 9 months as an industrial post-doc at Mallinckrodt in St. Louis and is now a permanent member of the research staff at Mallinckrodt. We were very pleased to be able to persuade Bill to accept an Adjunct Assistant Professorship in the department. He is currently teaching Organic Chemistry I in the evenings for us.

Peggy Nevels, B.S., is employed as a chemist in the Monsanto Agricultural Chemicals Company in St. Louis.

John Phipps, B.A., is employed by the P. D. George Co. in St. Louis.

Emilie Smith, B.A., is a graduate student in the Polymer Science Department at the University of Akron. Emilie worked for a year in the McDonnell-Douglas Research Labs prior to going to graduate school.

Gary Wester, B.A., is the Analytical Chemistry Laboratory Supervisor at Spectrolite Consortium Incorporated in Madison Illinois.

1988-89

Michael D. Morgan, Ph.D., has accepted an appointment at Battelle Institute in Columbus, Ohio.

Graduates 1988**May 1988**

John Boylan Ph.D.
Randy E. George B.A.
Harry Harlow Ph.D.
David Hubbard B.A.
William D. Johnson M.S.
William Lesko B.S.
Jeffrey Litchfield B.A.
Peggy Nevels B.S.
Michael Provance B.A.
Dawn L. Shiang Ph.D.
Clay Wilson B.A.
Karen Wright B.S.

August 1988

Robert M. Hall B.A.
James Roble M.S.
Gary Wester B.A.
Shuguang Wu M.S.

December 1988

Alicia M. Beatty B.S.
Susan D. Corey B.S.
Gregory Duncan B.S.
Mary C. Dudley B.A.
Christopher Ford M.S.
Cynthia Gahn B.A.
Michael D. Morgan Ph.D.
John A. Phipps B.A.
William R. Shiang Ph.D.
Thomas W. Thompson B.A.
James R. Wheatley B.S.

Facilities

The Science Complex provides us with 18,600 square feet of new, well-designed space, and another 6000 square feet of remodeled space in Benton Hall, so that the total space now occupied by the department is ca 42,000 square feet. Previously, in Benton Hall, we occupied ca 28,000 square feet. We occupy two complete floors in the south wing of the new construction and share another two floors with the physics department. The stock room is being moved to the former location of the Corey/Murray/Barton lab. and the space currently occupied by the stock room is to become an office suite.

The undergraduate labs have undergone some changes but the major remodeling awaits a \$6m appropriation that the University has requested from the legislature for this purpose. Some labs have new hoods, all have new HVAC units, and others, such as the physical chemistry lab and the old Winter lab, are seeing more substantial changes. The departmental reading room is carpeted and contains bookshelves built by Hal Harris and Ted Windsor. We had hoped for a new colloquium room but it was cut from the budget. We are currently trying to raise \$28,000, the estimated cost to remodel Benton Hall 408, from corporate contributions. Thus far we have received \$10,000 from Anheuser Busch, and \$1,000 from Emerson Electric. If there is any way you can help us with this fund-raising project, we would appreciate your efforts. Our seminars are attended by a large number of people so contributions, indicated publicly, would provide good PR for potential corporate donors. Thus we are seeking corporate rather than individual contributions.

We mentioned earlier that we have been able to add or replace instrumentation in the department. Three years ago, with the aid of an NSF grant, we were able to acquire a Varian XL-300 NMR spectrometer. This followed a similar purchase of a Perkin-Elmer 783 IR spectrometer in the previous year - again aided by a successful NSF grant. Last year, Dr. Winter organized another successful departmental proposal to the NSF which allowed us to purchase a Hewlett-Packard GC-MS. The latter was recently installed in the new mass spectrometry lab in the basement of the Science Complex.



Electronics technician, Joe Kramer, operating the new GC-MS, in the new laboratory in the Science Complex

With the aid of an NIH grant to Dr. Welsh, matched by Science complex and department funds, we have purchased a *Silicon Graphics* enhanced graphics

terminal for use in molecular modeling and related applications. The equipment was recently installed in a new computational chemistry laboratory in the area where the "copper room" once was located. Most recently, Dr. Riehl organized the successful NSF proposal for a CD/ORD spectropolarimeter which will be purchased very soon. We have a proposal, spearheaded by Dr. Chickos, pending with the NSF for a research FT-IR spectrometer. Our next goal is to raise funds to up-grade the X-ray diffractometer and to improve or provide additional NMR facilities.

We have also been fortunate in being able to acquire surplus equipment, through your efforts, from local industry. Thus we expect soon to take possession of a magnetic sector mass spectrometer from Monsanto, through the efforts of Dr. Tom Solsten (B.S. 1976). We now have three other GC-MS systems in the department. The first was obtained from the FDA lab in town, the other two were obtained through the efforts of Harold Messler, (B.S.1971), who is chief criminalist for the City of St. Louis and Victor Granat, (B. S. 1977), who holds an equivalent appointment with St. Louis County. These instruments will allow Dr. Winter to offer "hands on" courses in GC-MS. In addition we have received this year, again through your efforts, GC equipment, balances, spectrometers, and other surplus items.

For the first time in many years we have been able to set aside funds to replace equipment used exclusively in the undergraduate laboratories. We are replacing several obsolete IR spectrometers with a student model FT-IR in the organic chemistry lab as well as replacing six 20-year old analytical balances in the quant lab with three new electronic balances. By the end of the academic year, we hope to be able to replace a student GC, the student UV-VIS spectrometer, and to add a research UV-VIS spectrometer.

Clearly we are making progress, but we have a long way to go before we can say that our students have complete access to state-of-the-art instrumentation. We hope you will continue to remember us when equipment becomes expendable in your laboratories.

The Faculty

Gordon K. Anderson is the Director of Graduate Studies in the department. He is currently writing a 100-page chapter on the "Organometallic and Homogeneous Catalytic Chemistry of Palladium and Platinum" for the series "The Chemistry of the Palladium and Platinum Group Metals - Recent Advances", edited by F. R. Hartley. He presented two papers at the ACS/CIC meeting in Toronto in June, 1988, and continues his NATO-supported research with Dr. Ron Cross of the University of Glasgow.

Charles Armbruster is now the College of Arts and Sciences Health Sciences Advisor.

Lawrence Barton is completing a third three-year term as department chairman. He is relieved that the construction and remodeling associated with the Science Complex is almost over. He recently published a paper in *Inorganic Chemistry* and a couple of review articles. He served on the host organizing committee for the 1988 annual meeting of the *Council for Chemical Research* where he introduced Chancellor Barnett as one of the featured luncheon speakers. The University was well served by the conference in that it generated much goodwill and publicity for us. The membership consists of the directors of research of the major chemical companies and the chairs of all the Ph.D.-granting chemistry and chemical engineering departments in the US

James S. Chickos recently received a three-year grant from the ACS-PRF jointly with a colleague at the University of Illinois-Chicago for the project: . He continues his very productive research program and is currently recruiting for a post-doc.

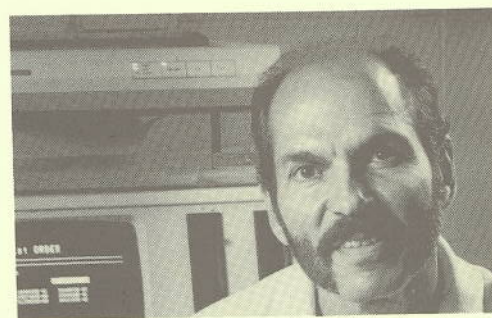
Joyce Corey, after a most difficult period this winter, has bounced back and is working as hard as ever. Joyce was awarded an ACS-PRF grant for three years for the project: "Silicon Analogs of substituted Ethanes and Propanes". She has been appointed to the Editorial Board of *Phosphorus, Sulfur and Silicon* and was also appointed book editor of the new journal *Heteroatom Chemistry*. She will spend the months of April and May in France at the University of Science and Technology of Langedoc supported by funds from the French government's CNRS. She will lecture and participate in the research programs there.

Valerian D'Souza, over the last year, has set up a research program to design and synthesize artificial redox enzymes. These artificial enzymes are expected to be far more stable and useful than the natural enzymes because they are non-proteinic in nature and consist of stable molecules like cyclodextrins.



Professor Valerian T. D'Souza

David Garin is currently Interim Director of the new Center for Science and Technology. Besides programs on Radon and Superconductivity, he has initiated a breakfast seminar series called *Eggs and Issues* and a program aimed at High School science teachers called the *Saturday Science Seminar*. You may have seen him on the TV news with a spot interview on chlorofluorocarbons or heard him on the radio talking about radon gas or the Center. In January, Dr. Garin described his recent research collaboration in a departmental seminar entitled "Organic Synthesis in the Search of the Aromatase Mechanism".

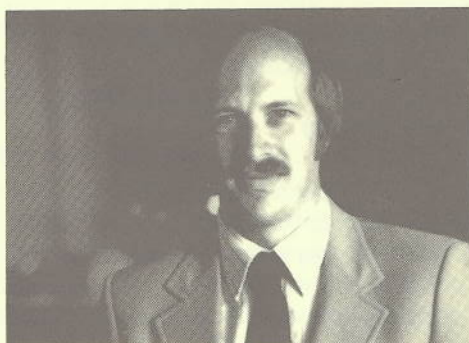


Professor David L. Garin

John L. Gutweiler continues to burn rubber between UM-St. Louis and Logan College. In addition to teaching analytical and introductory chemistry, he also is a faculty member at Logan College of Chiropractic. John has held a 75% non-regular appointment in the department since 1984 and has been an adjunct faculty member here since January, 1972.

Harold Harris has been studying theoretically the transfer of energy within small molecules, especially hydrogen cyanide and acetylene, and has discovered a new correlation function diagnostic for the onset of chaotic vibrations in such systems. The work is supported by a University grant joint with John Adams of UM-Columbia. Experimentally, he is investigating the photochemistry of chiral molecules using a polarized holographic grating approach. He has also been lecturing to local groups on acid rain and the so-called "Greenhouse Effect".

Wesley R. Harris has been in the department since August and was one of the first to occupy a new laboratory in the new research wing. He currently has a grant from the NIH for the study "Thermodynamics and Kinetics of Iron Removal from Serum Transferrin" and from the DOE for the study "Determination of Stability Constants of Lead and Bismuth with Novel sulfur Ligands". He has a postdoctoral fellow and a graduate student in his group, both of whom were with him at the University of Idaho.



Professor Wesley R. Harris

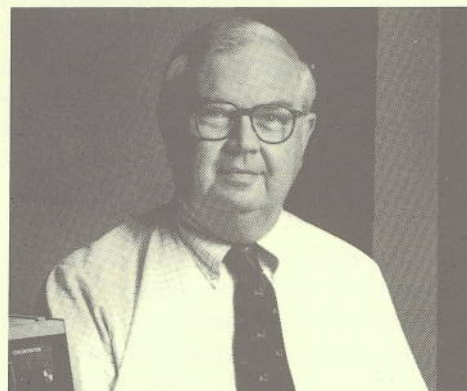
M. Thomas Jones was appointed Deputy to the Chancellor in the Fall so most of his activities take place in the upper echelons of campus affairs where the air is very thin. Dr. Jones has been particularly active in the struggle to establish an engineering program on this campus. Fortunately he has been able to keep his research program active and he is currently recruiting for a post-doc supported by a Missouri Research Assistance Act award. The next issue of the *Directory of Graduate Research* will list 11 publications for Tom. Pretty impressive for an administrator!

David Larsen has been busy in various collaborative research projects this past year. He and Dr Stan Manahan from UM-Columbia are collaborating on some work related to the Superfund Cleanup. The work has been supported by grants from the MRAA

and the Weldon Spring Fund. He is also collaborating with colleagues from biology, optometry, and with alum Ray Novack who is now at Wayne State University.

Jane Miller is chairman and organizer of the symposium; *The Bicentennial of the Chemical Revolution*, which will take place at the Dallas National Meeting of the ACS in April. The symposium will focus on the contributions of Antoine A. Lavoisier; scholars from across the US and from the UK are scheduled to make presentations. Dr. Miller raised funding for the program from industrial and private donations. She wrote a piece on "The History of the Chemical Bond" last Fall. It appeared in the November issue of *Chemical Bond*. We are delighted to announce that we just heard that our recommendation for Dr. Miller's promotion to Associate Professor was successful.

Robert W. Murray's work on dioxiranes continues to attract attention in the chemistry community. His work was described in *C. and E. News* last June and is cited extensively in *Reagents for Organic Synthesis*. He is the campus nominee for the 1989 Presidential Award for Research. Bob underwent quadruple bypass surgery in November but was soon up and about and professionally active again.



Professor Robert W. Murray

James J. O'Brien joined the faculty in January 1989. He was a replacement for John Schreifels and is currently teaching instrumental analysis. He is also extremely busy setting up his new laboratory where he intends to assemble a high resolution laser spectrometer for the studies of intracavity laser spectroscopy of species involved in chemical vapor deposition, and of interest in interplanetary atmospheres.

James P. Riehl just returned from a research leave in the Netherlands in the laboratory of Dr. Harry Dekkers at the University of Leiden. He wrote the successful proposal to the NSF which will allow us to purchase a CD/ORD Spectropolarimeter and is awaiting word that his NIH proposal for the project "Circularly Polarized Luminescence from Biochemical Systems" has been funded. He has already heard that it was recommended for funding.



Professor James P. Riehl

John Schreifels left the department this year and now is on the faculty of George Mason University in Fairfax, Virginia. We all wish John the very best of fortune in his new position. It was John's persistence which led to the rebirth of the *UMSL CHEMIST*.

Michael Sworin has had quite a productive year in research, publishing a second paper with his former student Bill Neumann on cyclopentanoid synthesis via directed cationic cyclizations. Mike will be leaving this year and we all wish him well.

William Welsh continues his NIH-supported research on modeling anti-cancer drugs, and has also initiated studies on drugs useful in treating Alzheimer's and related diseases and on a family of enzymes known as proteases. Dr. Welsh recently received a grant from the Monsanto Co. to support a post-doctoral fellow for collaborative studies with Dr. Jose Font of Monsanto Agricultural Co.

Rudolph E. K. Winter has been busy recently setting up the new mass spectrometry laboratory in the new Science complex and working out the bugs in our new spectrometer. Dr. Winter recently hired a Post-Doctoral Fellow with funds provided by the Monsanto Co. to work on the project "Chemical Studies Related to Bursaphelenchus Xylophilus Caused Rapid Pine Wilt".

NEW FACULTY

Dr Christopher Spilling will join the faculty in the Fall. Dr Spilling is currently a post-doc in the laboratory of Professor Barrett at Northwestern University. He is from Norwich, in East Anglia in southeast England. He received his Ph.D. degree from Loughborough University in 1986; his thesis title was: "The Intramolecular Ene Reactions of Some Unsaturated Acyloins". He is a synthetic organic chemist with interests in the preparation of enantiomerically pure molecules and applying the methods he develops in the synthesis of structurally challenging or biologically active natural products.

Contributions 1988-89

\$500.00 and above

Gregory W. Przygoda

\$250.00-\$500.00

Joseph O. Muo
Dorothy Greco

\$100.00-\$250.00

Douglas & Diane Neulle
Angelo W. Vangel
Virginia Martin Houserman

\$50.00-\$99.00

Dennis M. Anglim
Jeffrey Davis
James K. Grant
Dennis P. Parazak
Jeffrey A. Ronecker
Larry Revelle

Kathleen Cammack
Gregory P. Genova
Gregg J. Lumetta
Larry Revelle
Margret G. Rifleman
Judith L. Taylor
Dennis Wester

\$0.00-\$50.00

Susan (Moritz) Auinbauh	Phillip V. Asaro
Gerard R. Beasley	Pauline Bellavance
Debora F. Bergstrom	Paul B. Blystone
Roger W. Buchanan	John J. Chaber
Roberta Lee Farrell	James J. Grib
Shari Keith	Jeannette Kew
Vernon P. Koziatek	Fredrick R. Mitchell
John Reutner	Dikla Roufa
John W. Ruggeri	Carroll C. Sharp
	Richard C. Wisneski

1988-89 Departmental Awards

The awards program in the department is now coming of age. Several of you suggested that your contributions go toward a reception for the undergraduates at the end of the year. We have initiated such a program. At the final departmental colloquium the awards are presented, followed by a seminar by an outstanding alum. The undergraduates and all the honorees and their families are then invited to a reception in the Alumni Center.

Undergraduate

The first recipient of the Eric G. Brunngraber Undergraduate Fellowship is Tom C. Bedard. Tom is a junior, he has a 3.9 GPA, is a Curator's Scholar and is also in the Pierre Laclede Honors Program. Tom is an Eagle Scout and was honored by the Danforth Foundation "I dare you" program. The award carries a stipend of \$1000 for one year and the student is required to enroll for at least two credits of research during the award year. Tom has chosen to carry out his research under the direction of Professor Joyce Corey. Tom also won the Freshman Chemistry Award, which is sponsored by the Chemical Rubber Company, in 1987-88.

This year the Outstanding Junior Award goes to Michael M. Crowley. Mike has been at UM-St. Louis since the Fall 1987 semester. He was formerly a chemical engineering major at the University of Kansas. He did an internship at the P. D. George Co. in St. Louis and currently works part time at Monsanto. This award is sponsored by the St. Louis Section of the American Chemical Society. The Analytical Chemistry Award went to William Lesko last year. Bill also won the Alan F. Berndt Outstanding Senior Award for 1987-88. Bill graduated with a BS degree and is working at Envirodyne and participating in our part time MS program.

Graduate

The Mallinckrodt Fellowship went to two students this year. In the Fall Toshio Maruo was the recipient of a one-semester award. Tosh is a fifth year student working with Dr. Jones on organic conductors. Tosh was born in Tokyo, Japan and is a graduate of Muskingham College in New Concord, Ohio. We understand he is currently writing his thesis. The Fellowship was awarded to Minren Lin for the balance of 1989-90. Minren works with Dr. Anderson on the synthesis and characterization of some heterobimetallic complexes. Minren was also the recipient of the Summer Alumni Fellowship for the summer of 1988. The Fellowship carries a full summer stipend (\$1400) and represent a significant honor for the student, since summer support is often hard to find. Minren, who hails from Anhui, in China, expects to graduate some time in 1989. Three other graduate students were supported last summer partially by funds contributed by alumni. They were Nursen Coruh who works with Dr. Riehl, Young June Cho who works with Dr. Hal Harris, and Dee Lange, B.S., 1983, who works with Joyce Corey.

Alumni

This year the Alumni Association presented awards to five outstanding alumni at the annual meeting in June 1988. One of the awardees was Raymond Novak, B.S., 1968. As we described last year, Ray spent some time in the US Army Reserve after graduation and then went to Case-Western Reserve University to do graduate work. He received his Ph.D. in physical chemistry under the direction of Dr. Terry Swift in 1973 and in 1974 he took up a post-doctoral appointment at Northwestern University in the Department of Pharmacology. He held an NIH post-doctoral Fellowship in 1975-76 and following that rose through the faculty ranks. In 1986 he became Professor in the Departments of Anesthesia and Pharmacology and in 1988 was appointed Director of the Institute of Molecular Toxicology at Wayne State University. Ray has developed a fine reputation in his field. He is the author of about 50 publications, has made over one hundred presentations at professional meetings and conferences and has served on an NIH research grant review panel. He has attracted substantial external research support for his work. We were very pleased and proud that our nomination was selected as one of five awardees this year. The Alumni Association also presented \$100 to our Scholarship fund in recognition of our work with you all.

SUPPORT

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 telling your neighbors 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. If you wish to become a part of our planning process please let us know. Several alums are involved in our Advisory Council, others are involved with the Alumni Association. We have discussed forming a chemistry alumni group but that takes work. If you would like to volunteer to help establish one, please let us know.

If you decide to make a contribution please do so by using the tear off sheet at the end. If you choose not to make a contribution this time, please complete the "Information Update".

PLEASE DON'T FORGET THE ALUMNI RECEPTION

You are invited to attend the Fifth Annual Chemistry Alumni Reception. It will be held at the Alumni Center, 7956 Natural Bridge (across from Woods Hall) at 7:00 pm on Friday, April 7. Refreshments will be provided. Please let us know if you can attend. Also let us know if you would like a tour of the new Science Complex. Call Randa Schneider at (314) 553-5311, Monday through Friday, 8:00 am to 5:00 pm.

Editor-L. Barton
Proof-reading P.J. Barton, B.A.,(1977)
Formatting, J.P. Riehl

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 \$ _____

_____ Yes, I work for a matching gift corporation.

Designation for funds:

E. G. Brunngraber fellowship: _____

Other: _____

Unrestricted: _____

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

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