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THE IMPACT OF THE CHEMISTRY DEPARTMENT IN THE 1960'S AND EARLY 1970'S – PART 2

by William E. McEwen, Commonwealth Professor Emeritus

Editors Note. Part I of this article, which concluded with developments in the research activities of the organic division, appeared in the previous issue of the Goessmann Gazette (www.chem.umass.edu/Gazette/new_gazette.html). Part II begins with the Inorganic Division, proceeds through the rest of the divisions, describes the teaching activities of the department, reviews some of the service contributions of faculty and concludes with comments on the administrative staffing.

The addition of Robert Holmes, Ronald Archer, and John Wood to the faculty provided a major boost in the development of a strong research program in inorganic chemistry. Holmes' research that eventually led to the 1997 Award for Excellence in Main Group Chemistry Research sponsored by the International Council on Main Group Chemistry had its origins in the 1960's and 1970's. He has used an impressive array of synthetic, structural, mechanistic, and theoretical techniques to elucidate the chemistry of high-coordinate phosphorus

and silicon compounds. His work has greatly enhanced our understanding of the mechanisms of nucleophilic displacement reactions in both enzymatic and non-enzymatic environments. Bob has an impressive history of accomplishments focused on understanding the role of penta-coordination in nucleophilic displacement reactions and also on the role of hexa-coordination in some circumstances.

Ronald Archer undertook a vigorous research program on metal complexes and related bioinorganic and polymer systems when he arrived at UMass. This entailed synthesis, spectroscopy, kinetics, photochemistry, circular dichroism and metal-polymer surface coupling activities. As it will be mentioned later, he was also exceptionally active in administra-



William E. McEwen, 1964

Compliments of the Special Collections and Archives, W.E.B. DuBois Library, University of Massachusetts, Amherst

Alumni Reunion 2001

Reunion weekend this year was held on June 8-10. Alumni were welcomed by our department head, Paul Lahti. Refreshments were served and tours of the department were given. Of special interest was the tour to the new x-ray facility. The various activities produced an enjoyable weekend for all!



Kathy Tobiasen welcomes Jeremiah Herlihy '51.



Prof. Venkataraman explains about the new equipment in the X-ray facility.



Alumni Reunion 2001 attendees.

alumni news

Wesley D. Bonds, Jr. (Ph.D. '70), who has been working in academic genomics as a research associate at Yale after leaving Dow Chemical to get biochemistry training at UNC, has now accepted an academic position at Western Carolina University.

Alan P. Carpenter (Ph.D. '79) has joined Epix Medical Corp. of Cambridge, MA as Executive Vice President.

Eugene Y-X Chen (Ph.D. '95) was a member of a research team at Dow Chemical that prepared polymerization catalysts with two active sites per molecule. The work appeared in *J. Am. chem. Soc.* **123**, 745 (2001) and was discussed in the Science and Technology section of the Feb. 19, 2001 issue of C&EN. Eugene is now a faculty member in the chemistry department at Colorado State University.

Frank R. Denton III "Rusty" (Ph.D. '89) recently became the CEO of ZymeX Pharmaceuticals. This new, startup company aims to use patent-pending methods to develop lead compounds for protease inhibitor-based drugs. See http://www.terry.uga.edu/news/releases/2001/mba_bowl.html.

Salvatore R. DiNardi (Ph.D. '71), chair of the Department of Environmental Health Sciences at UMass, was presented the Distinguished Service Award by the American Industrial Hygiene Association in recognition of his work as editor of the widely read, comprehensive industrial hygiene "White Book" and as an author of many publications in the industrial hygiene field.

Steve Feldgus (B.S. '94) received his Ph.D. from the University of Wisconsin-Madison and is a Dreyfus Postdoctoral Teaching Fellow at Hamilton College, Clinton, NY.

Andrea M. Femino (B.S. '72) recently received her Ph.D. from the Albert Einstein College of Medicine. Her work in Biomedical Science is concerned with quantitative detection of fluorescent in situ hybridization of single messenger RNA molecules by digital imaging microscopy with image reconstruction by exhaustive photon reassignment.

Harold Garey (B.S. '60) emailed that he is still working full time as corporate Senior Scientist at SIA adhesives division of Sovereign Specialty Chemicals. He does R&D in a wide variety of urethane polymers. He also teaches advanced chemistry courses at UMass-Lowell, an activity he has been

alumni reunion '02

Don't miss next year's Alumni Reunion - 2002 to be held June 7, 8 & 9.

doing for 28 years. Harold and his wife have two young sons, and he has two grown children from a previous marriage.

Karen Hatwell (Ph.D. '99) is currently teaching at Swarthmore College in Pennsylvania after a joint postdoctoral appointment studying dioxygen bonding on copper(I) at Johns Hopkins University in Baltimore and the University of Basel in Switzerland.

Andrew S. Ichimura (Ph.D. '92) has joined the faculty at San Francisco State University in the Department of Chemistry & Biochemistry.

Binumol James (M.S. '01) has joined Abbott Labs.

Eugenio Jaramillo (Ph.D. '01) is a postdoc in theoretical chemistry at Sandia National Lab where he is modeling polymer blends.

Mary Kopusik (M.S. '90) contributed an invited article entitled, "Key to Successful Pharma Research" to the 125th anniversary issue of C&E News (March 2001, p. 179).

Chris Ling (Ph.D. '94) reports that all is well at Abbott Pharmaceuticals in Chicago, IL.

Owen Murphy (Ph.D. '01) an MCB student who worked in the Thompson lab, is now working at Tranxenogen.

Bryant Nelson (Ph.D. '96) contributed an invited article entitled, "Making Health Care

More Affordable" to the 125th anniversary issue of C&E News (March 2001, p. 288)

Paula Nolibos (Ph.D. '01), is Asst. Prof. of Chemistry at Gainesville College in Georgia.

Frank Plankey (B.S. '71) and *Ed Thorne* (B.S. '75) are in the R&D group at Zymark, producers of robots for the chemical laboratory, in Hopkinton, MA.

Frank Rossitto (Ph.D. '94) recently joined Agion Technologies in Wakefield, MA, a company that makes anti-microbials.

Kevin Slatkavitz (Ph.D. '85) is Global Head for Quality Assurance with AstraZeneca Co., based in Sweden, the U.K. and the U.S.A.

Herbert W. Ulmer (Ph.D. '92, B.S. '87) contributed an invited article entitled, "Balancing Short- and Long-Term Growth" to the 125th anniversary issue of C&E News (March 2001, p. 243).

Chunping Xie (Ph.D. '97) has joined Milliken & Company in Spartanburg, SC.

The special honoree for the 14th Biennial Marvel Symposium held at the University of Arizona, March 10-13, 2001, was *Kenneth J. Wynne* (Ph.D. '65). Ken was honored for his work in polymer science during his career as a program manager at the Office of Naval Research. He recently retired from that position and is now a professor at Virginia Commonwealth University.

Chancellor's Medal Award

The Chancellor's Medal, the highest honor given by the University, recognizes personal accomplishments and contributions to society in general and to the University in particular. Raphael P. "Ray" D'Alonzo received his Ph.D. in Chemistry in 1977 working with Prof. Siggia. He is now an associate director in the Pharmaceutical Division of Procter & Gamble, where he has been since finishing his Ph.D. studies. As P&G's primary contact person with the University, he has helped secure about \$2 million in grants, gifts and contracts for UMass. He is also a charter member of the College Advisory Council for the College of Natural Sciences and Mathematics.

Homecoming weekend began for Ray and his wife on Friday morning, November 3, 2000 at the Chemistry Department Symposium celebrating our Bioanalytical Initiative. Ray is one of the industrial founding fathers of the Initiative and was recognized for his efforts.

This was followed by the Awards Luncheon where Chancellor David Scott presented him with the Chancellor's Medal (see photo). Awardees are nominated by the schools and colleges of the University and Ray has the distinction of being nominated by both the College of Natural Sciences and Mathematics and the School of Public Health. His work building relationships between P&G and the University encompasses both of these units. Events of the day were capped in the evening by a dinner at the Campus Center hosted by President Bulger. Congratulations to Ray for this recognition of his many achievements on behalf of the University in general and of the Chemistry Department in particular.



Roger G. Bates Chemistry Fund

In the last issue of the *Goessmann Gazette* (Vol. 30, p. 4), we announced the establishment of the Roger Bates Chemistry Fund. Thanks to Roger's (B.S. '34) generosity, Sunomu Arobo (class of '03) has received the first award from the fund in the amount of \$2,500. The award was made in support of Sunomu's work with Prof. Maroney in the area of metalloenzyme biological chemistry. We thank Roger for establishing the fund and the flexibility it provides. It will enable us to fund various types of educational ventures in the future.

Featured Alumnus

Dr. Jeff Seeley received his Ph.D. from UMass in 1992, having worked with Professor Peter C. Uden in the Analytical Division. Jeff joined Procter and Gamble in August of 1992, working as an analytical chemist in their Laundry R&D group. He was attracted to P&G because of the diversity of opportunities available in the multi-national consumer goods company. He realized that one could develop soap and cleaners, health and beauty aids, coffee, food and beverages, diapers and paper goods as well as commodity chemicals, without ever leaving the parent company. He felt that he'd never be bored at such a place.

To test his theory Jeff has made several career changes within the Company. In June of 1999 he transferred from the Laundry Division (business unit) to the Corporate Research & Development - Chemical Technology Division. In this position Jeff works with R&D personnel from all of Procter's business units (Laundry, Health Care, Beauty Care, Foods and Paper Goods). Jeff also moved into R&D management in 1999, leaving the lab bench and his beloved chromatographs. Since the majority of P&G's R&D personnel are based in Cincinnati, his move did not require relocation. He manages a dedicated group of analytical chemists at the Miami Valley Laboratory facility, which is a mere hour drive from his home on the opposite side of the city. Fortunately, the hour drive allows him to prepare mentally for every challenging day. The 23 people in his research group keep him on his toes. He believes that he is a better chemist now that he has moved out of the lab; before he tended to focus on the tools of his trade (chromatography, electrophoresis, spectroscopy). Now he interacts with a more diverse set of chemical experts. The problems that they encounter during the course of their research are amazing and eye-opening. Jeff has been involved in such diverse R&D efforts ranging from the development of improved

packages for toothpaste to the design of molecules for hair growth/hair retention.

Concurrent with his transfer to the Miami Valley Labs, in 1999, Jeff became a Ph.D. recruiter for P&G—focusing on the Chemistry Department at UMass-Amherst. Since then he has traveled to the campus three times to meet with students, to conduct interviews and to share information about the R&D opportunities available at Procter and Gamble. During his last visit, in September 2001, he represented P&G during the P&G-sponsored symposium lecture given by Professor John Dorsey (Florida State University). Professor Dorsey had been a member of the Chemistry Department at the University of Cincinnati, and had numerous interactions with members of the P&G Corporate Analytical group from which Jeff hails.

Although Dr. Seeley is a native of Virginia, both he and his wife, Elaine, have strong ties to New England. She grew up in southern Connecticut and both went to graduate school in Massachusetts. They look for opportunities to bring their two elementary school-aged daughters to New England whenever possible. Over the Fourth of July, 2001 they were atop Mount Holyoke (the Summit House) looking through field glasses at the Lederle Research Tower. When asked, "What's that tall grey building, Daddy?", Jeff smiled and replied, "That's the place where I worked very hard for five years. That's the place that made it possible for us to sit up here and relax today."



UMass Develops Organic Web-based Education Tools

Creation of an organic chemistry database for our web-delivered learning tools system (OWL, "On-line Web-based Learning") is progressing with substantial grant support from the Dreyfus Foundation and NSF. Profs. Steve Hixson, Peter Lillya and Prof. Marietta Schwartz (Chemistry Department at UMass-Boston) are writing quiz questions, tutors, and discovery learning modules. The latter two are being turned into web-ready modules in Prof. Bill Vining's laboratory. Prof. Peter Samal is writing quiz questions and pre-lab materials for organic chemistry laboratory courses. Steve Hixson's summer organic chemistry students were the first to use the quiz questions and gave most of them a good review. This fall, students in both the honors organic and the large organic courses are being assigned OWL quiz questions. We will be doing student and faculty reviews of new tutors and discovery modules this fall, with full use of them planned for the spring semester. The newest development is full implementation of a drawing tool that allows students to draw structural formulas for organic molecules and submit them in answer to OWL questions on the web.

UMass organic chemistry students now can log-in and ask for a quiz on a specific assigned topic from any on-line computer. They have unlimited chances to demonstrate mastery of the topic by passing a quiz prior to a deadline. Each time they submit an answer they receive immediate feedback evaluating the answer. Once they pass a quiz, they may take additional quizzes on the same topic for practice. This was the mode of operation for OWL quizzes this summer and will continue in the fall.

Dr. Justin Fermann won a travel grant to discuss his research results this summer at the 13th International Zeolite Conference in Montpellier, France. Dr. Fermann presented his modeling of proton transfer and quantum tunneling in acidic zeolite catalysts.

Congratulations to *Professor Bret Jackson* on receiving an unsolicited award from the National Science Foundation in the form of a "Two Year Extension for Special Creativity" of his grant entitled, "The Effects of Lattice Vibrations on Molecule-Surface Interactions".

[Editor's Note: These awards are made by nomination of the program officers at NSF and are given only to the top few principal investigators in each of the program areas in the Chemistry Division at NSF. Their purpose is to extend the funding period of a grant from three to five years, thereby eliminating the need for preparation of a renewal proposal by the PI, and provide additional funding for the two extra years. In Bret's case he received \$185,000 in additional funds.]

Professor Paul M. Lahti was an invited speaker at the International Conference on Molecular Magnetism (ICMM 2000) in

September 2000 in beautiful San Antonio, TX. It was a great meeting at a great place, organized by Professors Kim Dunbar and Greg Girolami. He was also an invited speaker for two minisymposia at the 2001 Northeast Regional Section Meeting of the American Chemical Society at the University of New Hampshire during June 24-27, 2001: Molecular Magnetic Systems, and Reactive & Unusual Molecules.

Prof. Lahti was also an evaluating panelist at Washington, DC this past February 2001 for the ongoing National Science Foundation initiative on nanotechnology.

Professor Michael J. Maroney gave invited talks at the 10th International Conference on Biological Inorganic Chemistry in Florence, Italy, and the 3rd International Meeting on Molecular Mechanisms of Metal Toxicology and Carcinogenesis in Sardinia, Italy. He was also named to the Editorial Advisory Board of the Journal of Biological Inorganic Chemistry and to the WEB-based literature review service, Faculty of 2000. With the latter, he is on the Chemical Biology Faculty and reviews for the Bioinorganic Chemistry Section, which is headed by Drs. Michael Marietta and Joan S. Valentine.

Professor Bernie Miller and alumnus Dr. Pop Shenian were among fifty year members of the ACS for the year 2001.

Professor Vincent Rotello presented a talk entitled "Polymers, Nanoparticles and Molecular Recognition: From Plug-and-Play to Bricks-and-Mortar" at the Randolph T. Major Memorial Lecture Series at the University of Connecticut in October of 2000.

Professor Richard S. Stein was honored on the occasion of his 75th Birthday with a Symposium on Friday, October 20, 2000. It was held appropriately in the Conte Polymer Research Center and featured a number of Dick's former students and associates. John Keane (Ph.D. '51) gave introductory remarks. This was followed by lectures by Takeji Hashimoto, Robert E. Prud'homme (Ph.D. '73), and Do Yoon. After a break for lunch, Vivek Soni and Tom Russell spoke. The symposium ended following concluding remarks by Dick.

Professor Lynmarie Thompson was invited to speak at the following meetings and conferences between July of 2000 and June of 2001 to report on her work in solid state NMR: the 42nd Rocky Mountain Conference on Analytical Chemistry, the XIX International Conference on Magnetic

Resonance in Biological Systems, the International Chemical Congress of Pacific Basin Societies, the 42nd Experimental Nuclear Magnetic Resonance Conference, and the Gordon Research Conference on Magnetic Resonance.

Professor Julian Tyson recently received an NSF grant for investigating reaction chemistry. He has also been written up in the UMass Chronicle for his receipt of a grant for Preparing Future Faculty (PFF) from the American Chemical Society. Prof. Tyson and a number of graduate students attended the April 2001 San Diego American Chemical Society meeting as part of the PFF program. Education oriented activities were part of the venue at the Chicago ACS meeting last August. Julian and graduate students Greg Gallagher and Angela Fahey were there in regard to our PFF program. They subsequently appeared on page 41 of the September 10, 2001 issue of C&E News in an article describing the event that took place in Chicago

Professor Peter Uden was awarded the degree of Doctor of Science by the University of Bristol, U.K. in May 2001 in recognition of professional and academic scientific achievements.

Chemistry History Exhibit



Likeness of Karl Wilhelm Scheele embedded into clear class

This past summer, the New England Association of Chemistry Teachers held its annual meeting on campus. Prof. David Adams assembled an exhibit called, "Chemistry, History, and UMass Amherst" which was on display during the conference and through September at the Special Collections and Archives area of the Du Bois Library. A number of items related to the life of Prof. Goessmann were included, such as his walking cane bearing his initials, a medallion containing a likeness of his Ph.D. mentor, Friedrich Wohler, which was issued in 1882 upon Wohler's death, and a briefcase used by both Wohler and Jons Jakob

Berzelius on a trip through Norway and Sweden in 1824. (Photos by Stan Sherer/The Campus Chronicle)



Leather briefcase used by Wohler and Berzelius.



Walking cane bearing the initials of Charles A Goessmann.

New Faculty

The Department welcomes Dr. David A. Sommerfeld who has joined us as Lecturer in Physical and Analytical Chemistry. David has principal responsibility for the Analytical and Physical Chemistry teaching laboratories. He holds a Ph.D. from the Univ. of Utah, a B.S. in Chemistry from the Univ. of Minnesota–Twin Cities, and a B.A. in Philosophy from Texas A&M. David did post-doctoral work with D.R. Blake and F.S. Rowland at the Univ. of California–Irvine where he worked on studies of the sources for carbonyl sulfide and non-methane hydrocarbons in the atmosphere. His work at Utah with Edward Eyring involved spectroscopic studies of transition metal species in molecular sieves and the dispersion and reactivity of Fe-based catalysts for coal liquefaction. Prior to coming to Amherst, David was on the faculty at Lander University, in Greenwood, SC. While at Lander, he did research on the water quality of Lake Greenwood Reservoir with support from the V. Kann Rasmussen Foundation and Solutia Corporation. He also had support from the University to study magneto-kinetic effects on geminate radical pairs within molecular sieves. David's current research interests focus on the oxidation reactions of FeO_4^{2-} with aromatic species.



faculty promotions/tenure

The Department is pleased to announce the granting of tenure to *Ricardo B. Metz*, and his promotion to the rank of Associate Professor. Since joining the Department in 1995, Rick has built a strong reputation within the department as an excellent research mentor. He and his group have designed, built, and calibrated a complex, state-of-the-art laser mass spectrometer system for detecting and examining reactive intermediates by spectrometric methods. His group is very interdisciplinary, as shown by the presence of two students from Chemistry, one from Chemical Engineering, and one from Physics, among the several graduate and undergraduate students who already have worked with him. His work has been recognized by a Camille and Henry Dreyfus New Faculty Research Award (1995), as well as a National Science Foundation CAREER Award (1998). He has been a very strong contributor to teaching in the department, as well—for example, through his years as a Chemistry Department coordinator for the Physical Sciences Talent Advancement Program (PSITAP) on campus.

The Department is pleased to announce the promotion of *Vincent M. Rotello* to the rank of Professor. Since joining the department in 1993, Vince has proven himself one of the young, outstanding organic chemists in the department and in the country. His work in the areas of fullerenes, nanoparticle synthesis, and molecular recognition is internationally followed, and has drawn graduate students and postdoctoral researchers from around the world. His work has been recognized by numerous awards, including Research Corporation Cotrell Scholar (1996), a Camille & Henry Dreyfus Teacher-Scholar Award and a National Science Foundation CAREER Award (1997), and an Alfred P. Sloan Research Fellowship (1998). Vince has also been an energetic and inventive teacher, as shown by his contribution to the Harcourt Interactive Organic Chemistry CD-ROM project done jointly with Prof. William Vining.

visiting staff news

Dr. Prasanna S. Ghalsasi has joined Prof. Lahti's research group as a post-doctoral research associate. He is a native of Pune, India and was educated at the Indian Institute of Technology, Bombay,

and Pune University. His graduate thesis work at the University Department of Chemical Technology, Mumbai, India was titled, "Studies on Novel Molecular Materials".

Retirements

Professor Marvin D. Rausch retired at the end of August, 2001. A native of Topeka, Kansas, Marv received both his B.S. and Ph.D. in Chemistry at University of Kansas during the 1950's, the latter with Professor William McEwen (then at Univ. of Kansas, now Professor Emeritus at UMass-Amherst). He served as a research projects officer for the USAF Research and Development Command at Wright-Patterson Air Force Base in Ohio, then took an NSF Postdoctoral Fellowship at the University of Munich in Germany with Prof. Dr. E.O. Fischer. Following his postdoc, Marv became a senior research chemist at Central Research in Monsanto. A Visiting Professorship at the University of Kansas during 1961 seems to have inspired him on to teaching others to be the kind of superb organo-metallics chemist that he is, and he left Monsanto in 1963 to join our department as an associate professor as part of the great expansion of UMass-Amherst in the 1960's. Marv was promoted to Professor of Chemistry in 1968, and has been a major contributor to the department over the years.



Marv Rausch has received broad recognition and a number of special awards, such as Humboldt Fellowships (two, both at University of Munich), Gulf Oil Corporation Award in Organometallic Chemistry (1970), 3M Foundation Award in Organometallic Chemistry (1984 and 1985), Humboldt-Preis U.S. Scientist Award (at University of Bayreuth), and 70th Birthday Recognition in the journal, *Organometallics*. He has been an invited plenary speaker at many conferences, and is presently the permanent International Secretary of the International Conferences on Organometallic Chemistry. He is an author or co-author of over 350 research and review articles (and still increasing!), and has been on the editorial boards of several journals in the area of organometallic chemistry. He has been the direct mentor of over 40 Ph.D. students, and a large number of undergraduate and postdoctoral research associates. In addition, he has always been known as a friendly, available source of expertise in the areas of organic and organometallic chemistry for many students seeking advice. He is working with his last two Ph.D. students, and is still funded by industrial sources, who have strongly supported his research in recent years, both as sole principle investigator and in fruitful collaborations with colleagues such as Prof. J.C.W. "Jimmy" Chien.

Marv Rausch embodies the knowledge, enthusiasm, and dedication that makes an academic career successful. He has long been one of the most successful graduate student recruiters for our graduate program, and continues even now to be an advisor to our vital recruiting work. His Chemistry 369 course in advanced laboratory methodology set a standard for the training of advanced undergraduate and beginning graduate students, as attested by numerous students who have entered the "real world" after his course. His popularity as a teacher was continuous throughout his career. He even finds the time to pursue his love of mineralogy, collecting fantastic crystal and mineral samples from around the world, and acting as a major organizer of the annual Gem and Mineral Show at the Eastern States Exposition in Springfield, MA.

We are all very grateful for Marv's many years of service and mentorship at UMass-Amherst. We look forward to his continued presence and leadership qualities on our campus, even though he is officially retired. Whether he is cheering for the basketball team, or supporting our graduate program and our young faculty, Marv Rausch has been a great force for the advancement of our department into the competitive ranks of research universities.

chemistry seminar program

It was another exciting year for our department's seminar program which included the three named seminar series (thanks to generous sponsorship by Bayer, Procter & Gamble, and Adjunct Prof. William E. Mahoney) and the Five College Seminar Series. These seminars featured speakers from universities, national labs and industry, who spoke about topical areas of modern research.



Larry Friedman, Robert Langer, and Richard Stein

The fourth annual "Richard Stein-Bayer Corporation Honorary Seminar in Polymer Chemistry" was given on September 28, 2000. It was an opportunity for us to honor the remarkable achievements of Prof. Richard Stein and to hear some cutting edge medical chemistry. Our Bayer-Stein lecturer was Prof. Robert Langer from the Department of Chemical and Biomedical Engineering at MIT. He talked about "Advances in Polymer Based Drug Discovery and Tissue Engineering". Prof. Langer is a pioneer in the use of polymers for medical applications. In the late 1980's, with Dr. Vacanti, he demonstrated that living cells grown on polymer frameworks could function after being transplanted into animals. This landmark discovery opened the door to the new field of tissue engineering. Prof. Langer's research has also paved the path for the use of biodegradable polymer wafers for the delivery of drugs at a controlled rate inside the body.

On November 3, 2000, we celebrated our inaugural Annual William Mahoney Chemistry Seminar. This new seminar series has been made possible by a generous contribution by Mr.

William E. Mahoney, who is an Adjunct Professor of Chemistry at UMass and a former Vice President and Chief Operating Officer of Witco Corporation, CT. Mr. Mahoney (UMass Chemistry '55) has been closely involved with our department in educating our students on the role of chemistry in society. He chairs a seminar series titled "The Business of Science: Contemporary Practices", in which guest lecturers from various business corporations share their professional insights with students on the business related to science. Our inaugural Mahoney Seminar lecturer was the celebrated Dr. Henry C. Lee from the Connecticut State Police Forensic Science Laboratories. Dr. Lee is an expert forensic scientist who was involved in the investigations of many high-profile cases. Dr. Lee spoke about "Advances in Forensic Science" and energetically illustrated the role of chemistry/biochemistry in the judicial and forensic process.



David Mazzo, Paul Lahti, Henry Lee, Linda Slakey and William Mahoney

The fourth annual Procter and Gamble Chemistry Seminar was given on April 20, 2000 by one of our distinguished alumni, Prof. Donald Hunt from the University of Virginia (Ph.D. student of Profs. Rausch and Lillya). His topic was "Proteomics Automated Identification of Peptides and Proteins at the Attomole Level in Complex Mixtures by Mass Spectrometry". Don's talk was an outstanding description of the power of modern analytical chemistry to detect and interpret incredibly small amounts of materials in biological chemistry.



Paul Lahti and Donald Hunt

Also, for our departmental-seminar series, our graduate students invited Prof. Ronald Breslow from Columbia University and Prof. Jeffrey S. Moore from the University of Illinois. Prof. Moore showed how his group uses synthetic phenylacetylene-based macromolecules to order them into helical structures. Prof. Breslow, a past president of the ACS, talked about "Chelate Effect in Binding Catalysis and Chemotherapy". Our Five College Lecturer was Prof. Jeremy Berg from the Department of Biophysics, Johns Hopkins University School of Medicine.

We anticipate having an electrifying 2001-2002 seminar season, based on those to date. This year's Mahoney Lecturer was Prof. Dudley Herschbach from Harvard University. Prof. Herschbach won the Nobel Prize in Chemistry in 1986. He is engaged in several efforts to improve K-12 science education and public understanding of science. He serves as Chair of the Board of Trustees of Science Service, which publishes *Science News* and conducts the Intel Science Talent Search and the Intel International Science and Engineering Fair. He lectured about "Imaginary Gardens with Real Toads" on November 8, 2001 which drew a standing-room only crowd and local media attention to a great seminar series—details will follow in the next issue of the Goessmann Gazette.

Professor Dhandapani Venkataraman, Departmental Seminar Chair

undergraduate student news

Jarrod A. Hanson (Chem '01) received the 2001 American Institute of Chemists Undergraduate Student Award. The awards ceremony was held at Boston College on Thursday, April 26, 2001. The award is for a senior chemistry major with an "outstanding record of achievement, ability, leadership, and character." The award consists of a one year student associate membership in the AIC, a certificate of achievement suitable for framing, a peer reviewed journal, and a copy of and listing in the AIC professional Directory.

Pamela Shields (Chem '02) received an honors grant in support of her research with Prof. Lahti on pharmacological anti-cancer agents that tend to form radicals easily.

Srini Turaga (Chem and Comp Sci '02) spent the summer doing research at the Salk Institute in La Jolla, CA, studying novel computer memory architectures of the brain, with the goal of developing new insights for creating better computer memory storage devices.

Undergraduate researchers *Jason Tresback* (Chem '02) and *Jong Choi* (Chem '01) received Pfizer Research Educational Program And Recruiting Enterprise (PREPARE) fellowships of \$5,000 each for work in the laboratory of Prof. Paul M. Lahti during Summer 2000. Jason's work involved synthesis of novel organic light-emitting polymers (OLEPs) of potential use for display devices. Jong's work involved synthesis of phenolic molecules as anticancer agents. For the summer of 2001 just past, undergraduate researchers *Eric Turnberg* (Chem '02, Rotello lab) and *Katherine Huber* (Venkataraman lab) are the most recent recipients of the same award.

Pfizer has generously supported undergraduate research in organic chemistry for the past four years with a number of PREPARE fellowships.

The program is administered by Dr. Michael DeNinno of Pfizer's Groton, CT research facility; Dr. Brian O'Neil is a liaison contact between the company and the Chemistry Department for the program. A number of UMass alums are at Pfizer's Groton facility, and have been great guides for UMass undergraduates, groups of whom (typically juniors potentially interested in PREPARE) have been invited to visit Pfizer on an annual basis for a number of years. If you work for Pfizer, we hope you will pass along the department's thanks for its support of stronger undergraduate research experiences.

Undergraduate researchers *Tom Hill* (Chem '02, Venkataraman lab) and *Samantha Hoyo* (Chem '02, Lahti lab) were recipients of \$5,000 undergraduate research awards made by Bristol-Myers Squibb to support research during summer 2001. This is part of a new venture at our university by the company, aimed at promoting research experiences in organic synthetic chemistry. Tom's work involved the synthesis of helical, chiral organic molecules of electro-optical interest. Samantha's work involved the synthesis of heterocyclic molecules with pharmacological activity. The award recipients also participated in a day long visit to Bristol-Meyers Squibb's Wallingford Central research facility, capped by presentation of their work

The Bristol-Meyer Squibb Awards were announced to the department by Mauricio Futran, Vice President of Process Research and Development, and David Floyd, Vice President of Discovery Chemistry, both of the Bristol-Myers Squibb Pharmaceutical Research Institute. Dr. Joseph Yevich, of Bristol-Myers Squibb's Wallingford facility, is liaison between the company and the department. We are very proud and pleased to have been recipients of support from this new program, and hope for future support to provide top-notch research experiences for our undergraduate chemistry students.

Olympiad

Congratulations to Profs. Everett Turner and Thomas Whelan, who ran another great Chemistry Olympiad on Tuesday, March 20, 2001. The Olympiad competition in chemistry for high school students is a great opportunity for young scientists to get together and stretch their intellectual muscles. Our department hosts the Massachusetts site for the American Chemical Society Connecticut Valley Section (ACS-CVS) Olympiad. There were 250-275 students and teachers participating. It is not just a great opportunity for educators and scientists with chemical interests to get together, but is also a great chance for young students from the area to visit the department and find out more about the research programs in the department. Through the cooperation of Kenneth Burnham, the University Director of Financial Aid, and Edward Fitzgerald, the Chairman of the Education Committee of ACS-CVS, the University has set up a four-year, \$2500 annual scholarship to be offered annually to the instate student with the highest score at the Olympiad. This is an important addition to our Olympiad activities. Our thanks to all involved in making it possible.

undergraduate senior dinner

On May 17, 2001 a gathering of faculty, students, and proud parents met at the China Dynasty restaurant as the department held its annual Undergraduate Honors & Awards Dinner. A great time was had by all as the various awards were announced at the end of a fun banquet. Yeoman's work was done by Profs. John Wood (Director of Undergraduate Majors) and David Adams (Honors Program Coordinator), as well as Ms. Marie Whalen, Lisa Korpiewski, and Kathy Tobiassen. The following awards were made or announced at the dinner.

Claire T. Cohen—Connecticut Valley Section of the American Chemical Society (CVS/ACS) Student Award

Srinivas C. Turaga—HyperCube Scholar Award

Jong K. Choi—Merck Index Award

Carol N. Dormady—Merck Index Award

Jarrold A. Hanson—American Institute of Chemists Award

Melanie J. McWilliams—Richard W. Fessenden Award

David H. Jang—Robert Maxwell Williams Memorial Scholarship

Chi K. Lee—Robert Maxwell Williams Memorial Scholarship

Rhonda S. Sussman—Robert Maxwell Williams Memorial Scholarship

Claire T. Cohen, Jarrold A. Hanson, Jong K. Choi & Carol N. Dormady—Department of Chemistry Recognition Award



Professor Paul Lahti presents Brigid O'Brien with her award.

Brigid F. O'Brien—Analytical Chemistry Award from the American Chemical Society

Dwight B. Kelley—CRC Freshman Chemistry Award

Teresa S. Moniz—CRC Freshman Chemistry Award

Madeline Scheintaub—CRC Freshman Chemistry Award

Elisabeth H. Haley—Jay A. Pirog Scholarship

Mary Golden—Edward Shapiro Scholarship

Brigid O'Brien—Edward Shapiro Scholarship

Pamela Shields—Edward Shapiro Scholarship

Jennifer Simeone—Edward Shapiro Scholarship

Christopher Partovi—Edward Shapiro Scholarship

Lily Cheng—Edward Shapiro Scholarship

Anastasiya Siniavska—Edward Shapiro Scholarship

We are very proud of the hard work and achievements of chemistry majors in our program. We encourage our alumni in the private sector and graduate education worlds to keep an eye out for these great people!

degrees awarded

B.S. Degrees

Cemil Atay	Chandler, AZ	5/01
Mandy Bergeron	Belchertown, MA	2/01
Kelly Burnham	Essex, MA	5/01
Jong Choi	Shirley, MA	5/01
Claire Cohen	W. Hartford, CT	5/01
Stephen Cole	Lexington, MA	5/01
Carol Dormady	Goleta, CA	5/01
John Fiumara	Pembroke, MA	2/01
Jarrold Hanson	Pittsfield, MA	5/01
Laura Kapitzky	Florence, MA	5/01
Jeremy Kintigh	Acton, MA	2/01
David Magnusson	Worcester, MA	9/00
James Malandrinos	Ware, MA	5/01
Melanie McWilliams	Lancaster, PA	5/01
Madheeha Pitcher	Lawrence, MA	2/01
Tomomi Sakai	Yamaguchi, Japan	2/01
Michael Sheehan	Metheun, MA	2/01

M.S. Degrees

Fernando Aguirre	5/01
Melissa Allen	5/01
John Danku	5/01
Mark Gray	2/01
Michelle Herrmann	9/00
Binumol James	2/01
Li Qiang	9/00
Paul Serwinski	5/01
Kay Stringer	5/01
Su Su	2/01
Derek Van Allen	5/01

Ph.D. Degrees

Alejandro Cuello	5/01
Eleonora Del Federico	5/01
George Glavin	9/00
Hakan Gurleyuk	5/01
John Husband	5/01
Eugenio Jaramillo	5/01
Iaroslav Kuzmine	5/01
Guoyong Li	9/00
Yi Liao	2/01
Christopher Palmer	2/01
Michael Pitcher	2/01
Barrie Rhodes	9/00
Jacqueline Ruiz	5/01
Chun Ping Xie	2/01

1st Juanita Bradspies Award Goes for Undergraduate Research

The Department is pleased to announce that Mary Golden (Chem '03) was the first recipient of a Juanita Bradspies Award for \$3000. Mary used the award in support of research in the Mass Spectrometry and Molecular Weight Determination Laboratory with Dr. Steven Eyles during summer 2001. Her work on mass spectrometry should be very useful to help her pursue her strong interest in forensic science.

The Bradspies Award is made possible by an endowment fund created by Juanita Bradspies (B.S. '59), who had a wonderful career at Polaroid Corporation, and eventually retired to pursue interests in music and photography. "Nita" has been an enthusiastic supporter of the department in various ways in addition to the endowment creation. Her goal was that the Bradspies Award should support the needs of undergraduates interested in pursuing chemistry-related work. We are happy to be able to make the first award to an excellent student, and look forward to supporting more, similar ventures in the future, thanks to Nita's gift.

graduate student news

Faizah Al-Mjeni (Maroney lab) defended her Ph.D. dissertation this fall, and will join the chemistry faculty of Sultan Qaboos University in Oman.

Cristian Blanco (Auerbach lab) won a travel grant and presented his research this past summer at the 2001 Meeting of the North American Catalysis Society in Toronto, Canada. Mr. Blanco discussed modeling of microwave-driven zeolites.

Balwant Chohan (Ph.D. '01) is a Dreyfus teaching postdoctoral with Prof. Carl Carrano at SW Texas State University.

Gerry Davidson (Ph.D. '01) has joined the Nelson Institute for Environmental Medicine, NYU Medical School, as a postdoctoral fellow with Dr. Max Costa.

Lora Field (Lahti lab) gave a talk at the 2001 Northeast Regional Section Meeting on Molecular Magnetic Systems entitled, "The Synthesis and Structures of 5-(4-N-Tert-butyl-N-aminoxylphenyl) pyrimidine and its Coordination Complexes with Mn(hfac)₂ and Cu(hfac)₂." Her work is on hybrid inorganic/organic coordination complexes with interesting magnetic behavior, and are the first coordination complexes from the group that have been fully characterized for magnetic behavior.

Congratulations to *Gregory Gallagher* and *Michael Thompson* upon their nominations for the 2001-2002 Distinguished Teaching Award for graduate teaching assistants/associates, the highest honor for teaching at UMass. Nomination for these awards is considered the greatest tribute that can be paid to an educator by his or her students.

Congratulations to *Michael Pitcher* (Bianconi lab) for winning a Materials Research Society (MRS) Silver Medal Award for his research presented at the Society's meeting in Boston on November 29, 2000. Michael's oral presentation was given at the Synthesis, New

Methods, and New Materials session of the MRS meeting section on Solid State Chemistry of Inorganic Materials. The talk was entitled, "Biomimetic Synthesis of Single Crystals of Lithium Niobate at Room Temperature and Pressure," with coauthors, Yanan He and Professor Bianconi. He received his medal at the awards ceremony that culminated with Harvard Professor George Whitesides' Von Hippel Award address (the award won by Chemistry Department Professor Emeritus Richard Stein at MRS last year). The award also carries a monetary reward and a complementary membership in the MRS. Michael is currently a staff research chemist for W.R. Grace and Co. in Cambridge.

Ken Rotondi (Gierasch lab) passed his data defense in October. His final thesis defense was scheduled for December 19, 2001. He has accepted an offer for a post-doc with Cubist Pharmaceuticals in Lexington, MA.

Asli Sahin (Auerbach lab) won a grant to present her results to the Gordon Conference this past summer at Mt. Holyoke College on "Science Education and Visualization." Ms. Sahin discussed her new software on the "Visualization of Quantum Phenomena."

The GEO-Centers Fellowship Program —Our Thanks to Ed Marram

Recruitment of graduate students is vitally important to the Department. The process involves a large commitment of departmental time and resources in a very competitive environment, both nationally and worldwide. In 1988, a fellowship program for entering graduate students was established by *Dr. Edward Marram*, through GEO-Centers, the company he founded and serves as CEO. Since its founding, this ongoing fellowship program has provided well over \$100,000 to the department to help us attract well-qualified graduate students. Ed received his B.S. in chemistry here in 1959 and his MA in 1961 with Prof. John Ragle as his mentor. He interacts with the University in a number of ways, such as serving on the Advisory Council to the Dean of our College. We in Chemistry are extremely grateful to Ed for his support in an area that is so important to the success of our scholarly efforts.

research symposium & poster competition

The 12th Annual Research Symposium and Posterfest took place Saturday, April 21, 2001 and featured the following:

- A fascinating plenary lecture delivered by Prof. Dave Adams on the history of the Chemistry graduate program at UMass-Amherst.



Professor Venkataraman and Harriet Totoe.

- 37 excellent posters describing a variety of research projects, presented by 28 graduate students, 6 undergraduates, and 3 postdocs.

- 7 outstanding talks by graduate students.

The following gift certificate awards were presented for outstanding presentations:

PAUL DRUMMOND AWARD for Excellence in Graduate Research, 3rd place poster—David Scott (Tyson lab).



Cesar Sierra, Rui Hong, and Lora Field.

LOUIS QUIN AWARD for Excellence in Graduate Research, 2nd place poster—Daniel Duffy (Stidham/Hsu labs).

other news

We hope you have seen the excellent article on the Chemistry Department by Marietta Pritchard which appeared starting on page 28 of the Fall 2000 issue of the University alumni magazine, *UMass*. It contains a great deal of departmental history and information about current activities.

The International Council on Main group Chemistry (ICMGC), founded at UMass in 1990, held its first award workshop on Main Group Chemistry in December 2000 at the Pacificchem Conference in Honolulu, HI. The award, sponsored by Elsevier Science SA of Lausanne, Switzerland, consists of a check for US \$5,000, a medal and a citation. The first award winner was Professor Francois Mathey, Laboratoire Heteroelements et Coordination, DCPH Ecole Polytechnique, Palaiseau Cedex, France. Prof. William E. McEwen, Louis D. Quin and Robert R. Holmes were among the original founders of ICMGC.

GEORGE R. RICHASON AWARD for Excellence in Undergraduate Research, 1st place undergrad poster (TIE)—Srinivas Turaga (Auerbach lab) and Claire Cohen (Venkataraman lab).



Catherine Cogut, Professor Metz, and Asli Sahin.

ROBERT ROWELL AWARD for Excellences in Postdoctoral Research, 1st place poster—Bruce Maguire (Zimmermann/Hixson labs).

Travel Grants of \$600 were made to the following:

RONALD D. ARCHER AWARD for excellence in graduate research, 1st place poster—Jennifer Habink (Gierasch lab).

WILLIAM MCEWEN AWARD for Excellence in Graduate Research, 1st place talk—Fernando Aguirre (Metz lab).

All the presentations this year were excellent, which made judging the posters and talks very difficult. All the presenters should be commended for the high quality of their work. The judges for the event were Profs. Maroney, Metz, Kaltashov, and Adams. The symposium committee members were Justin Fermann, Kathy Tobiassen, Mark Gray, Igor Kaltashov and Richard Vachet (chair), all of whom are grateful to the many people who made the Posterfest a success.



Dmitry Gumerov and Professor Lillya.

Bioanalytical Initiative

In conjunction with Homecoming weekend, a symposium was organized to celebrate our Bioanalytical Initiative. In addition to recognizing Ray D'Alonzo (see Chancellor's Medal Award, p. 3) a keynote lecture was given by Dr. Thomas Keough of Procter and Gamble who spoke on "A New Approach for High-sensitivity Peptide Sequencing and Applications to Proteomics".



Professor Paul Lahti presents Ray D'Alonzo with a gift.

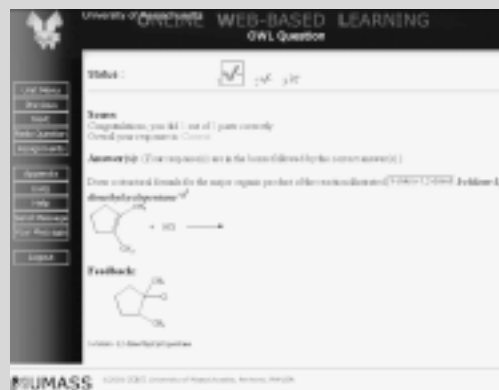
This was followed by graduate student presentations of research work given by Yajaira Combariza, Atataya Siripinyamond, Paula Nolibos, Laila Kott, Emily Yourd and Dmitri Gumerov. In the summer of 2001, eight first-year, analytical graduate students undertook internships with Boehringer-Ingelheim, Pfizer, or Schering Plough. A full year Graduate Fellowship sponsored by Schering Plough within the framework of the Initiative was awarded to Emily Yourd, and summer fellowships were awarded to Dmitri Gumerov and Nigel Metcalfe. For more details on the Bioanalytical Initiative, please see page 19 of the Fall/Winter 2000 issue of the *Goessmann Gazette* (Vol. 30) or www.chem.umass.edu/Gazette/new_gazette.html.

OWL (online web-based learning) Goes National!

OWL is an electronic homework system that was initially developed in 1996-1997 as a joint project between Chemistry and Computer Science to replace the old PLATO system in use by Chemistry. It has since been under continual development under the auspices of CCBIT (Center for Computer Based Instructional Technology) housed in the Computer Science Department, and is in use by seventeen UMass departments. Outside support for the development of the General Chemistry content for OWL has come primarily from NSF and FIPSE (about \$700K). As suggested by these granting agencies, we have found a publisher to partner with us in order to disseminate OWL: Brooks/Cole-Thomson Learning has licensed both the OWL system and the General Chemistry Content, which has been customized to several of their General Chemistry texts.

OWL, as served by this publisher, has been made available to general chemistry students on 33 campuses for the fall 2001 semester. Some of these campuses are just exploring OWL's possibilities, but the following 15 are actively using OWL in their general chemistry courses:

University of Alabama - Tuscaloosa, Alabama
Jefferson State Community College - Birmingham, Alabama
Montana Tech - Butte, Montana
Texas A&M - College Station, Texas
Worcester Polytechnic Institute - Worcester, Massachusetts
San Diego Mesa College - San Diego, California
University of Southern Mississippi - Hattiesburg, Mississippi
State University of New York - SUNY - Oneonta, Oneonta, New York
Hartwick College - Oneonta, New York
Hofstra University - Hempstead, New York
University of Alaska - Fairbanks, Fairbanks, Alaska
Skidmore College - Saratoga Springs, New York
Minnesota State University - Moorhead, Moorhead, Minnesota
Nebraska Wesleyan University - Lincoln, Nebraska
Drexel University - Main Campus, Philadelphia, Pennsylvania



A major thrust to OWL dissemination will come from this publisher when the new version of the Interactive General Chemistry CD-ROM (Kotz and Vining), which will be fully integrated with OWL, is made available in Fall 2002.

Chancellor's Citation Award

Congratulations to Ms. Kathy Tobiassen, our Graduate Program Manager, for her receipt of one of the Chancellor's Citation Awards for 2001. This honor is to "recognize and honor members of either the University's professional or classified staff, who have demonstrated outstanding performance in contributing their time and skills in helping the University achieve its goals and objectives".

Staff Arrivals/Departures/Promotions

Scott Lee-Bradley transferred to the College of Engineering as ECS Unix System Administrator.

Eric DeHays left the CRC to run the computer center for a local private school.

Matthew LeClaire was hired as a Computer Technical Specialist.

Stacy Leggett, Clerk III/Seminar Coordinator, resigned in April.

Brigette McKenna was hired as a Clerk III, and our new Seminar Coordinator.

Asaph Murphin, Electronics Shop, transferred to OIT as a Network Specialist.

Mark Snow was promoted to Technical Specialist I.

Robert Sabola was hired as an Instrumentation Engineer in the Electronics Shop.

Sarah (Sally) Sonn left the department in December.

Frank Stolle was promoted to our Computer Systems Administrator.

Marie Wilga joined us from Nursing as a Clerk III.

In Memoriam

P. Langdon Richards, class of '37, former vice president and director of Esso Chemical USA and later consultant for the petrochemical industry. A resident of Cummaquid on Cape Cod, he was born and raised in Northampton.

Elizabeth Sullivan Rigali, class of '53, passed away at Holyoke Hospital. She was the Controller at Springfield Children's Study Home.

Adrian White, who received his Ph.D. with Prof. Archer in the early-1990's, died suddenly from heart complications on March 23, 2001. He had been in St. Paul, MN in a 3M laboratory that became the

3M spinoff Imation, which was in turn bought by Eastman Kodak. One of the pallbearers was alumnus Dr. Michael Azure (who has been working for Diatide, Inc. in Londonderry, NH. As Dr. Paul Chen (who is with SiPix in San Jose) wrote, "He [Adrian] was a very nice and gentle person. He will be remembered by us."

New Additions

Vince Rotello and his wife Caren are proud parents of Vincent M. Rotello IV, born at 8:16 a.m. on May 31, 2001, weighing 7 lbs. 1 ounce. They state of course, that "he's the cutest baby ever".

Scott Auerbach, Sarah, Madeline and Nicholas are thrilled to announce the arrival of Annie (Anne Hagen) Auerbach, born at 12:31 p.m. on September 29, 2001, weighing 7 lbs. 6 ozs and 21 inches long.

Carl M. Allen '14, our oldest chemistry alumnus, passed away on Saturday, Dec. 8, 2001, seven weeks short of his 109th birthday. A feature article about Carl appeared in the Spring, 1998 issue of the *Goessman Gazette* and an announcement of his receiving the French Legion of Honor appeared on page 3 of Vol. 29.

tive and outreach activities. John Wood set up the first modern X-ray unit at UMass and subsequently carried out significant research studies on inorganic stereochemistry and charge density distributions in coordination compounds. He also carried out studies of the electronic properties of coordination compounds by spectroscopic, magnetic and ESR measurements. He developed a strong working relationship with scientists in the Netherlands at the University of Leiden and the University of Nijmegen. This collaboration has been very productive and, for example, produced a number of papers concerning studies of the Jahn-Teller effect.

The physical chemistry division was greatly enriched by the addition of Paul Cade, James C.W. Chien, William MacKnight and Earl Mortensen. Earl and Paul were both theoreticians. While Earl left to teach elsewhere, Paul Cade turned out the bluest of blue sky research in an area of chemistry that is a unique property of high level academic institutions. His early quantum mechanical studies of the electronic structure of molecules, interpretation of electronic charge distributions, positronium chemistry, theory of matrix trapping and point defects in solids, momentum densities and molecular positive ions gained world-wide recognition.

Jimmy Chien arrived as a full professor and immediately began a strong program of research. In those early days he was doing work on Ziegler Natta catalysts, and metal-replaced enzymes. An example of the latter was study of the single crystal EPR crystallography of cobalt myoglobin. Jimmy had many interests in the polymer field, including conducting polymers, and eventually joined the Polymer Science Department (PS&E). Before he, too, moved out of chemistry into the PS&E Department where

he eventually became Head, William MacKnight carried out research on structure-property relationships. This was later described in the award of an ACS Prize in Polymer Chemistry (1977) as "pioneering contributions to the understanding of property-structure relationships for microphase separated polymers, especially ionomers and polyurethanes, and experimental and theoretical studies defining the factors that control the miscibility of polymer blends". Altogether in his career, Bill has published about 300 papers and was the co-author of two high level books. He was appointed to the position of "Distinguished University Professor" in 1996 and "Wilmer D. Barrett Distinguished Professor" in 1998.

In the very early 1960's, the research effort in the analytical division was very much in need of manpower. With the departure of James Proctor, John Roberts was the sole member. John Olver and David Curran arrived on the scene in 1962 and 1963, respectively. John was involved in electrochemistry, applied chemical analysis, analytical applications of absorption and fluorescent spectra, chemical separations and analytical applications of NMR. Dave began work on chemical instrumentation and electroanalytical chemistry. Instrumentation utilizing pressure transducers are employed to detect titration endpoints, and make dilatometric measurements. Borides, carbides and nitrides were investigated as new electrode materials for studies in electroanalysis. Work was begun using reticulated vitreous carbon (RVC) as a structurally porous electrode material. Since that pioneering work, RVC electrodes have been used by workers throughout the world. Much effort was expended on the thin-layer electrochemistry of catecholamines which culmi-

nated in the first determination of these compounds in blood plasma by an electrochemical method. John Roberts pursued his interests in thermogravimetric analysis, fluorine chemistry, and rare earth chemistry.

The arrival of Sidney Siggia, who had already established a major reputation for analytical chemistry research in industry, was a major happening for the division and the Department. He not only continued a broad, quality program in many phases of analytical chemistry, but he had the ability to attract excellent new faculty members and graduate students to join the Department. He was also a prime mover in obtaining research funding, not only for himself, but for other members of the division. Largely through his efforts, Ramon Barnes and Peter Uden were added to the division in a timely manner, since John Olver had left the Department to become a highly successful state legislator and then a U.S. Congressman, a position in which he continues to this time.

Ramon Barnes rapidly established himself in the domain of analytical chemistry. By applications of inductively coupled plasma spectrochemical analyses, he and his students broke much new ground. Examples of some of the procedures that the Barnes' group developed include: vapor phase acid digestion of microsamples of biological materials in high temperature, high pressure ashes; determination of low silicon concentrations in foods and coral; analysis of electronic grade chlorine; determination of trace impurities in organic semi-conductor grade reagents and process chemicals. The Barnes group also devised new techniques for the preparation of samples to be used in analyses by inductively coupled plasma mass spectrometry. Ray also published an eminently successful newsletter covering new advances in the

types of analytical chemistry outlined above.

The hiring of Peter Uden in 1970 provided the division and the Department with an internationally recognized expert in the area of separations. Peter developed a research program with a focus on complex matrices such as oil shale, pharmaceuticals, humic substances, and others. On the instrumentation side, he had equally broad interests, such as column development, methods for element specific detection, and hyphenated techniques including separations with mass spectrometers used as detectors. Peter has garnered many awards for his work including the Chernyaev Medal of the Russian Academy of Sciences and the Award in Analytical Reactions and Analytical Reagents from the Royal Society of Chemistry in the United Kingdom.

During the time period under discussion, Profs. Marion Rhodes and Alfred Wynne devoted their efforts to the general chemistry program. However, they each eventually joined the analytical division and contributed to its success. Marion is an expert in the study of polymers, foams and crystals by optical microscopy techniques and was interested in the correlation of their morphology with their physical properties. Al Wynne is an expert in thermal methods of analysis and also included chemometrics among his research interests. They taught both introductory and upper level courses in analytical chemistry.

As mentioned earlier, the quality of undergraduate teaching in the Chemistry Department was excellent well before the major expansion in research was initiated in the early 1960's. By that time, the general chemistry program was carried out by such stalwarts as George Richason, John Chandler, George Oberlander, Thomas Zajicek,

Harold Smith, John George, Alfred Wynne, Marion Rhodes, and Everett Turner. Later, Rene Bernasconi, Everett Reed, Frances Collins and Dorothy Barnes joined this team. They were ably assisted by others in the freshman laboratory program: Bertha Fessenden, Gert Parkinson, and Kay Bullis. Professors John Ragle, John Wood, and Peter Lillya also participated in the honors program of general chemistry and introduced some of the newer concepts of physical, inorganic and organic chemistry, respectively. George Richason was the leader of this group for many years, and was the recipient of a University Distinguished Teacher Award. John Chandler took over the leadership of this program after George Richason became more involved in department governance activities. Everett Turner developed a course for non-science majors which has become one of the most popular science courses in the University.

The teaching program in undergraduate organic chemistry was also an excellent one, with George Cannon, Louis Carpino, Earl McWhorter and Robert Williams leading the way prior to 1960. They were later joined by Moyer Hunsberger, William McEwen, Peter Lillya, Marvin Rausch, Stephen Hixson, and Bernard Miller. George Cannon and Earl McWhorter (twice) have been honored by University Distinguished Teacher Awards. Earl McWhorter was in charge of the laboratory program in organic chemistry for most of his career, and division secretary for many years, supervising much of the administrative work of the division. Earl's efforts in these areas were a very significant contribution to the overall research program in organic chemistry in that his service made available more time for the other organic faculty to devote to research. Moyer Hunsberger became Dean of the College of

Arts and Sciences after one year as Head of the Department of Chemistry and teacher of organic chemistry.

The undergraduate physical chemistry staff around 1960 included Richard Stein, John Ragle, Robert Rowell, Howard Stidham, Thomas Stengle and Aimery Caron. Aimery left to teach elsewhere, but John Brandts, William MacKnight, Paul Cade, Earl Mortensen, and James C.W. Chien were added to the physical chemistry staff, greatly adding to the overall prestige of the group. Eventually, Bill and Jimmy left the Chemistry Department to join the Polymer Science and Engineering Department. John Brandts later became a mogul of industry, having founded his own company. His research here on the thermodynamics of protein folding was not only outstanding but served as an augury of future developments in biochemical research at UMass years later. Howard Stidham has run the laboratory program in Physical Chemistry for many years while still finding time to pursue his interests in graduate level teaching and in research.

Although originally understaffed, the inorganic division nevertheless contained a capable group of teachers, including John George, John Chandler, Harold Smith and Thomas Zajicek. The strength of the division was enormously increased by the addition of Ronald Archer, Robert Holmes, John Wood, and Roberta Day who also contributed in a major sense to the general chemistry program. As mentioned previously, the analytical division was barely able to maintain its undergraduate course program until the arrival of Professors Olver, Curran, Siggia, Barnes and Uden in the 1960's and early 1970's.

The faculty members mentioned previously received many awards and citations

during their careers, only a few of which have been cited thus far. Richard Stein and William MacKnight are members of the National Academy of Sciences. Louis Carpino, Peter Uden, Robert Holmes, and William MacKnight have received awards from the American Chemical Society and other national or international societies. Paul Cade, Richard Stein and William McEwen have received the Chancellor's Medal from UMass. George Richason, George Cannon, Earl McWhorter, Peter Uden, and Peter Lillya have won campus awards for outstanding teaching. Marvin Rausch, Robert Holmes and William McEwen have been honored by the dedication of certain issues of prominent journals to them. William McEwen was the recipient of The Outstanding Civilian Service Medal from the Department of the Army.

Many also have engaged extensively in outreach activities. David Curran, Ronald Archer, Robert Rowell and William McEwen have served as Councilors in the American Chemical Society. McEwen has served as a member of the Board of Directors of the ACS, and Archer has served as Chairman of the Education Division of the Society. Curran served two terms as Treasurer of the Analytical Division of ACS. Rowell, Holmes and McEwen are chief editors of leading journals. Several faculty members have also been active in organizing symposia at national and international meetings. MacKnight was the Chairman of several Gordon Conferences on Polymers, Dielectric Phenomena, and on Ion-containing Polymers. Rowell was Chairman of the National Colloid Symposium in 1972 and National Secretary of the ACS Division of Colloid and Surface Chemistry, 1972-76. Rausch helped to organize the Organometallic Subdivision of the Inorganic Division of ACS and served as its first Chairperson in 1969. Holmes

organized one of the recent IRIS Conferences and McEwen organized an ACS Symposium on the stereochemistry of organophosphorus compounds in the 1960's and he, with the aid of Alfred P. Wolf, organized a conference covering mechanisms of organic chemistry held at Brookhaven National laboratory in the 1970's. Similar activities of Richard Stein would require a full page of their own, and they were covered in an article in the previous edition of the *Goessmann Gazette*.

Probably all of the members of the Department have provided services beyond those expected for teaching and research. Anthony Gawienowski and Marvin Rausch did much work in the planning for the construction of the Lederle Graduate Research Center. Their efforts helped enable Graduate Dean Edward Moore to obtain a grant of 1.3 million dollars from the federal government to help defray the costs of the construction of the new center. Gawienowski and Rausch also provided the major driving force for the purchase of the first xerox machine on the campus. The old timers will remember the clothes lines that once hung in the front office to suspend and dry documents produced by an antediluvian wet copier. John Wood performed the Herculean task of obtaining the first Enraf-Nonius X-ray diffraction apparatus for the department. Robert Rowell was the founder and the first director of the UMass Research Computing Center. Professors Rowell, Stein and Dean Moore were responsible for identifying computer science as a necessary academic discipline and in establishing a Control Data 3600 Computer Facility in old Goessmann. As mentioned previously, the Biochemistry and Polymer Science & Engineering Departments have been successful spin-offs from the Chemistry Department.

No large department of a major university can function efficiently without an effective administrative staff. This includes the Head, Associate or Assistant Head, Director of Laboratories, and a host of accountants, secretaries, shop people, electricians, janitors, etc. If the Head of a department had to supervise closely all such activities, he or she would have no time for teaching and research. McEwen was fortunate to have George Richason as Associate Head and George Oberlander as the Director of Laboratories during the period under consideration here. They both turned in a superior performance in their positions, and this enabled McEwen to carry out some teaching, a large amount of direction of the research of graduate students and postdoctoral fellows, and to participate fully in the recruitment of new faculty members. Credit must also be given to the staff members who did their jobs so well. In particular, Janet Hrynshyn and Linda Warren have held their positions as long as our most senior faculty members. Without their enormous help, the job of the faculty would have been considerably more difficult. They were the glue that held the front office and the general chemistry office together over a period of time in which there have been seven different department heads.

On all of the various fronts, the faculty and staff hired during the last quarter of the twentieth century have proven that they are capable of carrying on and enhancing the functions of the Department of Chemistry. George Richason, Ronald Archer, Robert Rowell, Louis Quin, Lila Gierasch and now Paul Lahti have all added their considerable skills and knowledge to lead the Department to more lofty levels of fame and prestige. Much has changed since many of the events described in this article, but one

factor remains constant—namely, the evolution of the department faculty, educational programs, and research to meet the changing times.



UNIVERSITY OF MASSACHUSETTS

Dr. William E. McEwen, a 39-year-old scientist, has been named Commonwealth Professor and head of the Department of Chemistry at the University of Massachusetts, it was announced by Provost G.L. Woodside. As head of the department of some 20 faculty members, Dr. McEwen will coordinate extensive teaching and research programs.

A specialist in organic chemistry and presently professor of chemistry at the University of Kansas, Dr. McEwen is author of numerous articles in the field of organic chemistry and is also co-author of three volumes used as standard texts in many colleges and universities.

Active in the American Chemical Society, he is chairman of the National Committee on Membership Affairs and a member of the Council Policy Committee and the subcommittee on communications within the society.

— excerpt from the 1962 issue of the *Valchemist*

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Friends of UMass Chemistry thanks for your support!

Dr. Alexander R. Amell	1947	Dr. Wayne B. Eisman	1971	Mr. Karl M. Hergenrother	1954	Mr. Michael P. O'Malley	1970
Mrs. Patricia P. Anderson	1982	Dr. Wayne F. Erickson	1968	Dr. Carol L. Hermsdorf	1965	Mr. Moshe Oren	1977
Mr. Sidney C. Anderson	1980	Dr. Rosanna Falabella	1975	Mrs. Florence E. Hook	1950	Mrs. Rose Marie L. Ormsby	1947
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Dr. John S. Babiec, Jr.	1967	Mrs. Karen L. Fang	1983	Mr. Edward J. Isaac	1970	Dr. George A. Pearse, Jr.	1952
Mr. Curtis A. Barratt	1979	Dr. David C. Farwell	1959	Dr. William M. Jackson	1970	Mrs. Janet R. Pearse	1953
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Mr. Edmond G. Benoit	1965	Dr. Richard J. Field	1963	Ms. Ling-Ling Kang	1985	Dr. Michael T. Philbin	1988
Mr. Mark T. Berard	1992	Mrs. Nellie M. Foltz	1937	Dr. John E. Kapitzky	1976	Mrs. Jean B. Philbrick	1943
Dr. Russell R. Bessette	1967	Mrs. Barbara M. Foster	1979	Mrs. Patricia R. Kapitzky		Mr. Anthony J. Polito	1943
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Mr. Fred V. Brutcher, Jr.	1947	Dr. Bruce C. Galbreath	1970	Mrs. Rosalind G. Kingsbury	1943	Dr. Peter C. Rahn	1973
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Mr. David W. Caird	1934	Mr. Charles R. Gallucci	1985	Dr. Arthur F. Kluge	1967	Mr. Richard A. Ricci	1982
Mr. Alcon H. Chadwick	1959	Dr. Judith C. Gallucci	1979	Dr. Philip E. Koski	1952	Prof. George R. Richason, Jr.	1937
Dr. Hann-Guang J. Chao	1988	Ms. Lucille Anne Gannon		Dr. Marc L. Kullberg	1981	Mrs. Elaine R. Ring	1963
Mrs. Mary M. Chappuis	1945	Dr. Robert G. Gastinger	1976	Mrs. Carol A. LaFlamme	1958	Mr. Lawrence R. Roberts	1972
Dr. Gary A. Chinman	1983	Dr. Walter K. Gavlick	1988	Dr. Marie L. Landry	1970	Dr. Frank C. Rossitto	1994
Dr. Donald Ciappenelli	1966	Dr. Andrew K. Gelasco	1990	Mr. Ronald D. Lees	1963	Dr. Regina M. Ruggiero	1984
Dr. Leon S. Ciereszko	1939	Mrs. Susan E. Geldart	1984	Mr. David G. Lemire	1986	Mrs. Linda A. Saari	1974
Mrs. Betty J. Clapp	1953	Mr. Harvey W. Gendreau	1972	Mr. Clark A. Lennon	1961	Dr. Thomas P. Sassi	1989
Dr. Charles E. Clapp	1952	David & Christine Gibian	1979	Dr. Albert B. Levit	1973	Dr. Anthony C. Savitsky	1973
Mr. Michael J. Clifford	1950	Mr. Michael S. Gigliotti	1985	Dr. Christopher Ling	1994	Dr. Donald S. Scheufele	1958
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Mrs. R. Nancy Curran	1955	Dr. M. Joyce Graf	1977	Edward and Mary McIntire		Dr. Emil J. Slowinski	1946
Dr. Sean A. Curran	1981	Dr. Robert E. Graf	1972	Dr. Joanne V. Mei	1984	Mrs. Susan E. Smith	1980
Mr. Stephen S. Curran	1973	Mrs. Jean C. Grahame	1947	Mr. Paul F. Meunier	1977	Mrs. Marion G. Snuggs	1939
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Dr. Joseph F. Dingman, Jr.	1969	Mr. D. Richard Griffith	1975	Dr. Eric A. Mintz	1978	Mrs. Sally-Ann R. Spurling	1955
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Mr. John W. Dobiecki	1981	Dr. Dennis S. Hackett	1976	Dr. Thomas H. Mourey	1976	Mr. Stephen H. Steel	1968
Mr. C.W. Donovan, Jr.	1963	Robert & Yvonne Haff	1950	Mr. James R. Mouser	1989	Prof. Howard D. Stidham	
Mr. Donald J. Drosehn	1973	Mr. Joseph N. Haffty	1950	Mr. James T.F. Mullenwey, Jr.	1987	Mrs. Constance M. Stokinger	1946
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Mrs. Sally Edelstein	1951	Dr. David E. Henderson	1975	Dr. Ven O. Ochaya	1993	Mrs. Mary T. Tokas	1981
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Mr. Adrian A. White	1993	Mr. Michael S. Young	1975
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Dr. Jonathan J. Wilker	1991	Mr. Robert S. Zwonik	1979
Mrs. Jeanne L. Williams	1972		

Please, keep in touch!

We want to know what you have been doing. Send news of your activities, promotions, new positions, etc. to include in the next issue of the *Goessmann Gazette*. You can also send information via email at gazette@chem.umass.edu. We look forward to hearing from you!

Dear Friends of the Chemistry Department,

This has been a very hard year for our country. For those of you who lost friends and loved ones to the despicable terrorists attacks this fall, please know that our deepest sympathies and support go with you. At a time when so much of our attention seems to be directed to the differences between cultures that can cause people to pursue such evil, I offer our newsletter as evidence that another way thrives at UMass-Amherst. The Chemistry Department here consists of faculty, staff, and graduate students from over 30 different countries around the globe, working together to educate young students and to develop important research directions. As you read through these pages, I hope you will share our pride in the accomplishments of present and alumni members of the department. If you have a story to share, I hope you will send it to us. All of us from UMass are a community, and we must stand and support one another in difficult times. The sharing of good news is a way that we can help spread the word that, collectively, we can, do, and will continue to make the world a better place.

Sincerely,



Paul M. Lahti, Department Head

Telephone: 413-545-4890

Fax: 413-545-0011

Email: lahti@chem.umass.edu

The Chemistry annual fund

Enclosed is my check for \$_____ made payable to the *University of Massachusetts* to be credited to the **Department of Chemistry Annual Fund**.

Would you prefer to pledge?

Pledge amount \$_____ to be paid to the **Chemistry Annual Fund** in _____ months or as follows: _____.

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Would you like information about alternative ways of giving to the Department? _____

•Deferred gifts

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For more information about how your gift can work to mutual advantage (for example, estate planning) given your specific financial plans, call Steve Tanne, Director of Development, 413-545-0974.

Fund for the Future Drive

Faculty renewal is the single most important issue facing the department today. To set up a new faculty member with the laboratory facilities and resources necessary to establish a research program and to compete successfully for external funding involves, on average, an investment of \$250,000 to \$500,000. The magnitude of the financial problem this creates is easily seen when viewed from our college level; all nine departments are facing the need for faculty renewal. In chemistry, we currently have two searches on-going. We anticipate needing to make searches annually over the next few years to pursue our desire to make our department one of the best in the nation in our areas of strength. Such an investment in new faculty yields good returns as demonstrated by the fact that each faculty member hired over the past decade has brought in \$5-10 for every dollar spent on startup.

Participation in the faculty renewal process by our alumni sends a powerful message to the university administration and to officials of the Commonwealth. We ask for your special support at this time to establish a Fund for the Future. Every contribution made will be a boost to our startup funds for hires beginning next fall and into the future. This is especially so during the current climate of financial constraint in the Commonwealth. But we can continue to improve our excellence by making top quality hires. We ask for your help in this vital venture.

I know that some of our alumni are considering gifts to provide a laboratory named for themselves, a family member, or a favorite professor. Please be assured that these gifts also serve to support startup packages for faculty renewal. If you would like more information on this, please contact Stephen Tanne, our college's Director of Development at 413-545-0974 or stanne@nsm.umass.edu.

I am starting this fund with my personal pledge of \$1,000 to the department. Every dollar of the Fund for the Future will be spent on new faculty needs. Please join with me if you are able. Your gift should be made payable to the department, with a note stating that the gift is intended for the Fund for the Future.

Many thanks for your help.



Paul M. Lahti, Department Head

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