University of Minnesota • Department of Chemistry

# ChemNews

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Spring 2002

## GREETINGS FROM THE CHAIR

**Wayne L. Gladfelter, Chair**

It has been too many years since we have assembled a newsletter for the Department of Chemistry. One of the great outcomes of the alumni breakfast meetings we host at the national ACS meetings has been the realization that you are interested in keeping in touch with us. This has provided us with the motivation needed to prepare this letter. Even with a total of 24 pages, we could not hope to cover all of the changes in the last eight years, so this letter will include a mix of recent (within the last year) events and trends.

Throughout the 1990's a large number of faculty departures have meant we have been on an almost nonstop hiring campaign. At this moment we have 41 tenured and tenure-track faculty members with 21 Full, 8 Associate and 12 Assistant Professors. With the average age of 41, several of us bemoan the fact that we are now in the older half (or even smaller fraction) of the faculty. It means, however, that the level of energy and enthusiasm is almost as hard to contain as the growing size of many research groups. The growth in grant income reflects this change and the number of postdoctoral associates has doubled over the last few years. In the Fall of 2001 our incoming class of 49 graduate students included several with major fellowships. The total number of graduate students in the department remains steady at approximately 230. The number of undergraduate chemistry majors, however, has increased dramatically during the '90's. We now graduate an average of 80 majors every year.

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### Great Lakes Regional Meeting

The Department of Chemistry in conjunction with the Minnesota Section of the American Chemical Society will host the 34th Great Lakes Regional ACS meeting on June 2 – 4, 2002 at the Radisson Metrodome Hotel, which is located in Stadium Village adjacent to the Twin Cities campus. The program has been planned, and you can expect to see details in an upcoming issue of C&ENews. You can also find information at the meeting website located at http://www.chem.umn.edu/glrm. The meeting theme is "Chemistry at the Interface" and symposia will highlight the central role played by chemistry in biology, materials and environmental studies. In addition to a large poster session and reception to be held in the new Gateway building, general sessions in analytical, organic, inorganic and physical chemistry and in chemical education will be an excellent venue for researchers to present their latest results. The program includes a special symposium highlighting undergraduate research. It is a wonderful time of the year to visit the Twin Cities and we hope to see many alumni and friends at this meeting.

**U of MN Chemistry Alumni & Friends Breakfast Meeting at the 223rd ACS National Meeting April 7-11, 2002 Orlando, FL**

The next Alumni & Friends Breakfast Meeting is scheduled for 7:30 on Tuesday April 9th at the 223rd ACS Meeting in Orlando, FL. PLEASE BE SURE TO REGISTER FOR EVENT #110 WHEN YOU FILL OUT THE ACS REGISTRATION FORM.

# Chair's letter continued

Wayne L. Gladfelter, Chair

One of the exciting new grants that started this year is directed by Jeff Roberts. The NSF Research Science and Education Center (RSEC) will provide $2,000,000 over four years to help the Department of Chemistry promote research at primarily undergraduate institutions. The funds will be used to pay for visitors to conduct research in partnership with faculty members at the U of M and many other related activities. During the summer of 2002 we will renovate our main seminar room (Smith 331) and equip it with the technology necessary to produce live webcasts. This will allow selected seminars to be presented to a wide community of students and faculty at our partner institutions.

A measure of the respect that the community has for our faculty is the number of editorial offices now housed in Chemistry. Don Truhlar is an Associate Editor for *J. Am. Chem. Soc.*, Larry Que is the Editor-in-Chief of *J. Biological Inorganic Chemistry* and Chris Cramer is Editor-in-Chief of *Theoretical Accounts*. In January of 2001, Tim Lodge was appointed as the Editor-in-Chief of *Macromolecules*. This flagship publication in the field of polymer science prints approximately 10,000 journal pages each year.

Over the past two years we have been planning the construction of a new 7,000 square feet instrumentation facility that would house the solution and solid state NMR and mass spectrometry facilities and the single crystal X-ray crystallography lab. This $1.8 million renovation project is being funded by donations from alumni and friends. Especially noteworthy is the commitment of $1 million from Dr. Claire Le Claire, who received his PhD in 1938 from our department working with Prof. Fred Koelsch. We are also grateful to the Dow Chemical Foundation for a grant of $300,000. The facility will be located in the basement level between Smith and Kolthoff Halls. Much of the space is currently occupied by the glass shop that will move to a new location in Smith Hall.

If you are planning to attend a national ACS meeting in Orlando or Boston in 2002, remember that we will have an alumni breakfast on Tuesday morning and we would be happy to see you. We hope you enjoy reading this newsletter, and, as always, we would be happy to hear from you.

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## Attention Alumni

**Send us your update.** Send your update to either www.chem.umn.edu/alumni/contact.html or alumni@chem.umn.edu

**Let us know what you think.** We want this publication to reflect the interests of our readers. Send your comments to:

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ChemNews
Winter 2002





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# New Chairs In Chemistry

## The Leonard J. Czuba Chair in Chemistry

In May 1999, the Chemistry Department was named as the sole beneficiary of the Leonard J. and Judith A. Czuba Charitable Remainder Trust. Funds from the trust will establish the Leonard J. Czuba Chair in Chemistry. The priority of the Czuba Chair will be to support the hiring of a highly talented new Chemistry Faculty or to honor a distinguished and deserving member of the Chemistry Faculty. Len and Judy were invited to be speakers at the January 2001 Naples, FL Presidents Club Event and shared the following personal thoughts to an admiring audience of over 300 University of Minnesota Donors.

"Thank you very much. I'm deeply honored to be a member of the Builders' Society and to receive this beautiful sculpture in recognition of my gift. You've asked that I share my reasons for the gift. Very simply, it's my way of recognizing the much greater gift that I received from the University some 35 years ago--a superb graduate education in Organic Chemistry. What better way to acknowledge such a gift than by helping the University to continue to provide the same opportunity to future generations of aspiring chemists.

Coming from a relatively modest background, I never gave much thought to philanthropy. Like most people, I was concentrating on raising a family and developing a career. As it turned out, I worked in drug and food product research for 31 years with just one company, Pfizer Inc. My career with this wonderful company was very rewarding--personally, professionally, and financially. I've said many times over the years that I owe everything I have to Pfizer, including my lovely bride, Judy.

So when it became time to retire and enjoy all this good fortune, it was crystal clear to me that I was obligated to share it. I could never have been so successful without being the product of an excellent education. I was one of those kids that always loved going to school (and I still do), and my entire educational process was a wonderful experience. But the crowning jewel of that process was the four years I spent earning a Ph.D. in Organic Chemistry at the University of Minnesota."

Len received a B.S. degree in 1961 from Indiana University and received his Ph.D. from the University of Minnesota in 1967 under the late Bill Parham. After a very successful career with Pfizer, Central Research in Groton, CT Len moved to Pfizer Headquarters in New York where he retired Director of Regulatory Affairs for the Consumer Healthcare Group. His wife, Judy, also had a very successful career in Public Relations at Pfizer traveling several times around the globe. Today both Len and Judy are enjoying their retirement with their beloved cat, Abigail, as all three travel the Eastern Seaboard, both by land and sea. Our thanks and best wishes go to Len as a loyal alumnus of our department and to his lovely wife, Judy.

Judy and Leonard Czuba

Julianne and Stephen Prager

## The Prager Chair in Macromolecular Science

In November 1999, Stephen and Julianne H. Prager declared their intent to establish a fund to be known as the Prager Chair in Macromolecular Science in the Institute of Technology. The purpose of the fund is to promote faculty excellence in macromolecular science within the Chemistry Department.

Steve (B.S., 1947) and Julie Prager (B.S., 1946) are both graduates of Brown University in Providence, R.I. and both received their Ph.D.'s at Cornell University, Steve in Physical Chemistry (1951, with Frank Long) and Julie in Organic Chemistry (1953, with A.T. Blomquist). Steve spent a postdoctoral year as a Jewett Fellow at the University of Utah (1951-52 with Henry Eyring) and then joined the faculty at the University of Minnesota in 1952, becoming a full professor in 1962. He was a Guggenheim Fellow and Fulbright Scholar at the University of Brussels in 1958-59 (with Nobel Laureate, Ilya Prigogine) and again was a Guggenheim Fellow and Fulbright Lecturer in 1966-67 at the University of Erlangen, Germany, when he was a visiting professor (with Ludwig Waldmann). His research was in the area of the physical chemistry of macromolecules, particularly in the application of mathematics to rheology. Steve retired in 1990 but has continued , as a lecturer, to teach physical chemistry and polymer courses from time to time.

Julie Prager had an outstanding career at the 3M Company in St. Paul, beginning in 1952, first as a synthetic polymer chemist, then as a fluoroxy chemist. Later she moved into information science and research coordination. When she retired in 1989 after 37 years at 3M, she had become Executive Director of Corporate Technical Planning and Coordination. Julie was also very active for many years in the MN Section of the ACS and in 1986, she received the sections Minnesota Award.

Steve and Julie have made a very generous commitment to the future of the Chemistry Department. Prior to the commitment to support the Prager Chair, in July 1999, they established the Chemistry Faculty Support Fund. For this, we are also very grateful.

## Investing in the Future of Chemistry

**Paul Allison, Development Officer for Chemistry**

Chemistry alumni give back to their alma mater for several reasons. Many alumni wish to provide opportunities to new students as a way of recognizing the financial assistance they received. Alumni often see the University of Minnesota as a vehicle to accomplish personal goals, perpetuating their own values and beliefs, and preparing new graduates to

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face world challenges. Other alumni have special memories from their time as students and they would like to pass along that opportunity to future scholars. Alumni support in Chemistry is an investment in the future success of students, faculty, research and industry.

The University of Minnesota embarked on a $1.3 billion campaign on July 1, 1997,"Campaign Minnesota". President Mark Yudof has remarked that "We have entered the era of ideas. Brainpower –Minnesota's intellectual capital- is our most critical resource. The University of Minnesota is our best hope for providing all citizens with access to exceptional higher education." Campaign Minnesota has three specific focus areas:

- Recruit, develop, and retain top faculty
- Attract students with promise and help them succeed
- Invest in Minnesota's future through strategic initiatives

You can support general or specific programs in the Chemistry Department. Gifts are most often accepted in the form of cash (i.e. checks or securities), deferred gifts (i.e. charitable remainder trusts, gift annuities), or bequests (wills, IRAs). Currently, the University of Minnesota and the Graduate School have made it possible for donors to receive a match when they establish a new Endowed Gradate Fellowship and meet minimum funding requirements. Fellowships are an increasingly important asset in attracting the brightest graduate students.

It is an exciting time to be at the University of Minnesota and I am proud to have the opportunity to represent the Chemistry Department. I would like to thank alumni across the country and the outstanding faculty and staff who have provided me support and make chemistry a rewarding experience. I look forward to meeting more alumni over the next year and encourage you to contact me regarding your individual or corporate support of Chemistry. You can send an email to me at allison@itdean.umn.edu or call me at 1-612-625-6035.

# New Faculty

A warm welcome is extended to Lee Penn and Andrew Taton, our new faculty members.

**Lee Penn** joined our faculty as an Assistant Professor in July of 2001. Lee did her undergraduate work at Beloit College in Beloit, Wisconsin, where she received her B.S. in chemistry in 1992. She went on to graduate school in the Materials Science Program at the University of Wisconsin - Madison where she worked with Professor Jill Banfield and was funded by a National Physical Science Foundation graduate fellowship. She completed her Ph.D. in the summer of 1998. She was then a postdoctoral associate in the area of environmental geochemistry at the Johns Hopkins University, where she worked with Professors David Veblen and Alan Stone for about two and a half years. Lee's research focus involves both naturally-occurring and synthetic nanocrystalline materials. She uses coupling high-resolution microscopy techniques with analytical and wet chemical methods in order to develop a fundamental understanding of the link between microstructure and chemical behavior. Lee loves to bike and do a wide range of other outdoor activities and has been teaching herself to play acoustic guitar. Lee's office is 225 Smith Hall, 626-4680; her lab is 9 Smith Hall; 626-9710.

**Andrew Taton** also joined our faculty as an Assistant Professor in July of 2001. Andy completed his undergraduate thesis in physical organic chemistry at Yale University under the direction of Professor Kenneth Wiberg in 1992. He then moved to Harvard University to continue his studies in physical organic chemistry under Professor Peter Chen. His work took him to the Eidgenössische Technische Hochschule Zürich (ETH) in Switzerland from 1994 to 1998, where his work on "bottleable carbenes" leaned towards the organic side of physical organic chemistry. (He also learned to appreciate the finer points of fondue.) After briefly returning to Harvard to complete his Ph.D., he worked with Professors Chad Mirkin and Robert Letsinger as a postdoctoral associate at Northwestern University. Andy's research at Northwestern focused on developing new bioanalytical technologies using inorganic nanoparticles as biomolecular markers. Andy's current research program addresses the interface between bioorganic and nanomaterials chemistry and seeks to engineer hybrid materials for nanoscale architectures and bioanalysis. Though new to Minnesota culture, Andy enjoys wild rice soup and walleye with his wife Kristin, a senior chemist at SurModics, Inc. and St. Paul native. Andy's office is 455 Kolthoff, 626-4681; his lab is 456 Kolthoff; 625-9815.

# Retirement in 2001

**Wilmer G. Miller** retired in June of 2001. He was born in Mt. Orab, Ohio on August 28, 1932. He graduated from Mt. Orab High School in 1950. He enrolled at Capital University, Columbus, OH, and received a B.S. degree in 1954 with majors in chemistry and mathematics. Wilmer received the American Institute of Chemists Outstanding Senior Award. He entered graduate school in 1954 at the University of Wisconsin, Madison. Working under Professor Robert Alberty, he received his Ph.D. in physical chemistry in 1958. His research was in biophysical chemistry, resulting in seven published papers. He spent the next year at Harvard University as a U.S. Public Health Service Postdoctoral Fellow with Professor George B. Kistiakowsky, initiating studies on biodegradation of synthetic proteins. He continued these studies the next year as a postdoctoral associate while at the University of Minnesota, overseeing the research group of Professor Rufus Lumry, who was on sabbatical.

Wilmer started as Assistant Professor in 1960 at the University of Iowa, teaching

physical chemistry and polymer science. In 1964 he was awarded a Guggenheim Fellowship and spent the year with Professor Paul Flory at Stanford University carrying out experimental and theoretical work on the physical chemistry of biopolymers. In 1966 he became Associate Professor. He joined the faculty of the University of Minnesota as Associate Professor of Chemistry in 1967 and was promoted to Professor in 1970. In 1972 he spent six months on sabbatical at The Institut Louis Pasteur, Strassbourg, France, with Professor J. M. Lehn, followed by six months as a USA/USSR Exchange Scientist at the Academy of Sciences of the USSR in Moscow with Professor O. B. Ptitsyn. In 1982 he was a visiting professor in the Department of Physics at Universidad Autonoma Metropolitana, Mexico, and in 1990 he was on sabbatical at the Department of Physics, Massey University, New Zealand, with Professor Paul Callaghan.

Wilmer taught freshman chemistry, and undergraduate and graduate physical chemistry and polymer chemistry. His research has dealt with a variety of areas such as polymer physical chemistry, surfactants for oil recovery, liquid crystals, and fossil amber. This has resulted in a number of publications. He was the advisor to a number of undergraduates, graduate students, and postdoctorals. At various times he served as director of graduate studies, vice chair, industrial consultant, assistant journal editor, grant committee member.

We wish Wilmer a long and productive retirement as he spends time on chemistry in the department, and also many years of happiness with his wife Elli at their home on the North Shore of Lake Superior, raising reindeer and honing his woodworking skills.

# In Memoriam

## Edward J. Meehan 1912 – 2000

B. S. 1933 and Ph.D. 1936, both at the University of California at Berkeley
Of this Faculty 1939 - 1982

Ed Meehan, professor of analytical chemistry, helped develop synthetic rubber for the United States during World War II. He was born in Oakland, California. He met his wife, Katherine, while she was a student in one of his classes. Their daughter, Katherine Carpel of Golden Valley, said they started dating only after the class ended. They were married in the mid-1940's and raised three children in their Falcon Heights home. His colleague and friend Bryce Crawford (Regents' Professor Emeritus) describes Meehan as quick-witted and an excellent lecturer. "He was one of the best characters in the old chemistry department," Crawford said. Meehan was a deeply religious, quiet and refined man who enjoyed learning, said daughter Carpel, and was "extremely kind, gentle, and patient." In addition to his service to the University as chemistry professor for over 40 years, Meehan worked as consultant to Phillips Petroleum Company, Gulf Oil, and Honeywell's aerospace division. He died on April 28, 2000. Besides his daughter, he is survived by two sons, Edward Meehan, Jr. of Falcon Heights, and James Meehan, of Burnsville; six grandsons; and a sister, Mary Brealin of San Pablo, California. His wife of 54 years preceded him in death.

## Archie Spencer Wilson 1921-2000

B.S. 1946 Iowa State College
M.S. 1950 & Ph.D. 1951 University of Chicago
Of this Faculty 1971 - 1989

Archie S. Wilson was born in Tekoa, Washington on January 19, 1921. He grew up in Portland, Oregon and graduated from U.S. Grant High School in 1939. He enrolled in Iowa State College in 1939 and continued his schooling until January 1943, at which time he joined the Manhattan Project at Iowa State College. For the next 3 1/2 years he was a research associate in X-ray diffraction studies of solid structures with the late Professor Robert E. Rundle. In 1946 he was selected to participate in a special graduate studies program of the U.S. Army Quartermaster Corps and was commissioned a 2nd Lieutenant. He received his B.S. in chemistry from Iowa State College in August 1946 and matriculated into the graduate school at the University of Chicago in the fall under the Quartermaster Corps program. He received his M.S. and Ph.D. degrees, respectively, in 1950 and 1951 under the direction of Professor Henry Taube, Nobel Laureate in Chemistry, 1983. From 1950 to 1951 he was an instructor in chemistry at the University of Nebraska. In 1951 he joined the General Electric Company as a research chemist at the Hanford Laboratories in Richland, Washington. For the twenty years that he was at the Hanford Laboratories, he specialized in inorganic chemistry of fission products, mainly ruthenium, and the actinide elements, but especially plutonium and uranium. He was selected as a speaker at the 2nd International Conference On the Peaceful Uses of Atomic Energy in Geneva, 1958 where he gave a paper on the extraction of plutonium from aqueous solution. In 1971, Archie Wilson was appointed Professor of Chemistry in the Department of Chemistry at the University of Minnesota. He served as Associate Chairman of the Department from 1971 until 1978. He retired as Professor Emeritus in 1989.

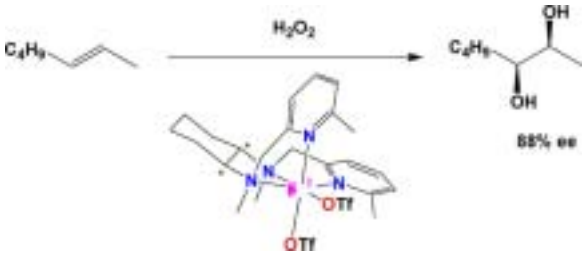
Archie Wilson authored or co-authored 57 technical communications in the X-ray determination of solid structures, ruthenium chemistry, plutonium processing, solvent extraction of the actinide elements, computer techniques for indexing X-ray powder patterns and chemical education. He held four patents in the processing of nuclear fuels.

Archie Wilson was a member of the board of trustees of Central Washington State College from 1959 to 1969. He was a member of the American Chemical Society, Sigma Xi, National Science Teachers Association and a Fellow of the American Association for the Advancement of Science.

Archie Wilson died June 6, 2000 from pulmonary hypertension caused by sarcoidosis of the lungs. Archie Wilson is survived by his wife, three children, two grandchildren, two brothers and many nieces and nephews.

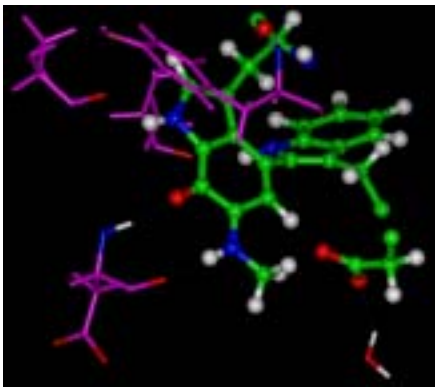
# Research Highlights

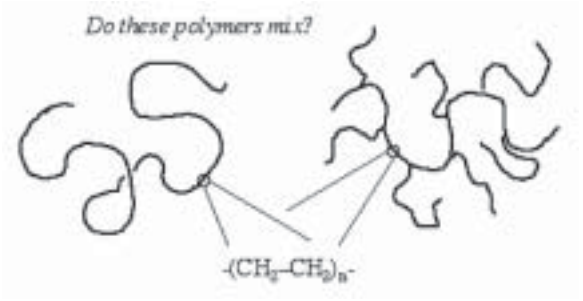
These are just a few of the highlights of the research conducted in the department within the last year. For more on the research developments see the departmental website: http://www.chem.umn.edu/netstep/




The *cis*-dihydroxylation of olefins is usually carried out by toxic heavy metal reagents. Inspired by the fact that *cis*-dihydroxylation is carried out in nature by nonheme iron enzymes, Miquel Costas, Adrianne Tipton, Du-Hwan Jo, Kui Chen, and **Professor Lawrence Que** reported the first example of a synthetic iron catalyst for asymmetric *cis*-dihydroxylation of olefins. Using hydrogen peroxide as oxidant, an enantiomeric excess of as high as 88% can be obtained with trans-2-heptene (see figure). This iron complex could thus be considered the first example of a "greener" or more environmentally friendly version of an olefin cis-dihydroxylation catalyst.

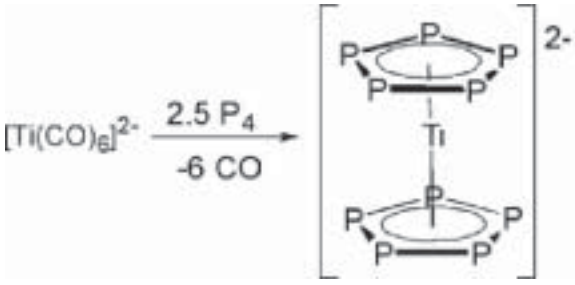
The specific means by which the activation barrier of enzymatic reactions is reduced remains vigorously debated. Two ways to lower the effective threshold energy for reaction are release of quantum mechanical zero point energy and quantum mechanical tunneling. Cristobal Alhambra, Maria Luz Sánchez, José Corchado, and **Professors Jiali Gao and Don Truhlar** have developed a computational scheme for estimating such quantum effects in enzyme reactions. The method was applied to methylamine dehydrogenase, which converts primary amines into aldehydes; the chemical step involves proton transfer from an iminoquinone moiety on the cofactor to an Asp residue of the enzyme (see figure). Quantum effects were found to lower the free energy of activation by 5.7 kcal/mol. By also considering deuteron transfer, they validated the calculation by computing a kinetic isotope effect that agrees with experiment. They found that about 99% of the reaction occurs by tunneling, which provides the most striking evidence yet for the contribution of tunneling processes in enzymatic reactions at physiological temperatures.

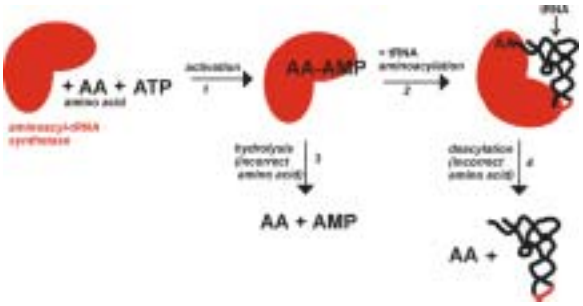





The phase behavior of simple polymers can be quite remarkable. A question of scientific and technological importance is whether chain architecture is sufficient to induce phase separation. Ying-Ying Chen and **Professors Frank Bates and Timothy Lodge** demonstrated that highly branched and linear polymers of the same repeat unit can phase separate. Because the identical monomer structures result in a zero heat of mixing, the phase transition is driven by entropy. A linear polymer has a loose, random walk conformation, whereas a branched one has less conformational freedom. When the two are exchanged, neither can easily fill the space vacated by the other, thereby incurring an entropic penalty. These researchers have synthesized model comb and linear polymers of poly(ethylene-*r*-ethylethylene) and studied their phase behavior by small-angle neutron scattering. They find that as the molecular weight is increased, a 50:50 linear:comb blend changes from miscible to immiscible, in good agreement with theory.

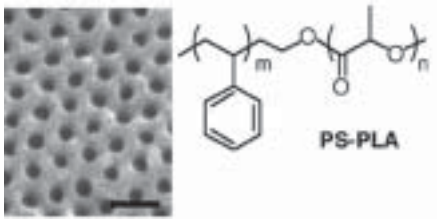
In work carried out by Eugenijus Urnezius, William Brennessel, and **Professors Christopher Cramer and John Ellis**, the first all inorganic metallocene (see figure) has been synthesized and characterized by elemental analysis, NMR, and quantum mechanical electronic structure calculations. The carbon-free metallocene was prepared by room temperature solution reaction of hexacarbonyltitanate with white phosphorus. Structural characterization by single-crystal x-ray diffraction confirmed the presence of two eclipsed and planar $P_5$ rings bound in $\eta^5$ fashion to central titanium.



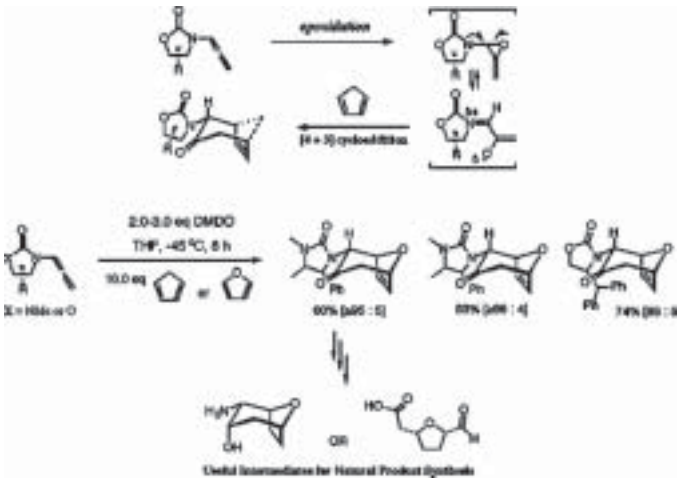



The accurate translation of the genetic code is critical to the survival of all living organisms. Aminoacyl-tRNA synthetases are enzymes that help to ensure the accuracy of translation by catalyzing the specific attachment of a particular amino acid to its cognate transfer RNA (tRNA). The amino acid is first activated with ATP to form an enzyme-bound aminoacyl-adenylate (arrow 1 in the figure). Then, the amino acid is transferred to the tRNA (arrow 2). Penny J. Beuning and **Associate Professor Karin Musier-Forsyth** discovered that E. coli ProRS can deacylate a mischarged tRNA specific for proline. That is, this enzyme has amino acid editing or proofreading activity, ensuring that the wrong amino acid is not incorporated into a growing polypeptide chain in protein synthesis. More specifically, ProRS can hydrolyze a misactivated alanine-adenylate (arrow 3 in Figure), as well as the mischarged Ala-tRNA$^{Pro}$ (arrow 4). Moreover, Beuning, Musier-Forsyth, and graduate student Fai Chu Wong, have identified specific amino acid residues in ProRS that are responsible for this proofreading function.

Mesoporous materials with pore sizes on the nanometer length scale are highly regarded for a range of applications from size/shape-selective catalysts to inner-layer dielectrics for microelectronics. Andy Zalusky, Roberto Olayo, Chuck Taylor, and **Assistant Professor Marc Hillmyer** have prepared a mesoporous organic monolith through the combination of block copolymer self-assembly, with the long-range order resulting from shear alignment, and facile chemical degradation. The use of ordered block copolymers as templates for the formation of porous materials involves the selective removal of the minority component leaving a matrix filled with nanoscopic voids. Hillmyer and coworkers prepared an oriented diblock copolymer containing nanoscopic cylinders of degradable polymer (polylactide) embedded in an inert, thermoplastic matrix (polystyrene) and used this material as a precursor to a mesoporous polystyrene monolith by removal of the polylactide. Scanning electron micrographs (see figure) show hexagonally close packed 22 nm diameter channels.

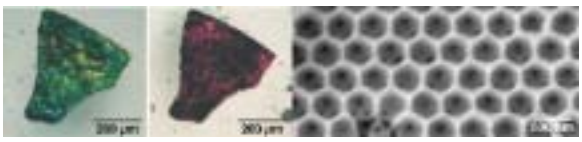



*Scanning electron micrograph of the nanoporous polystyrene monolith containing hexagonally close-packed, oriented, and continuous 22 nm diameter channels with a packing density of $10^{11}$ channels/ $cm^2$ (the scale bar is 50 nm).*



Hui Xiong, Craig Berry, C. Rameshkumar, and **Assistant Professor Richard Hsung** reported the first epoxidation reactions of 1-amidoallenes. The epoxidation protocol is highly chemoselective for oxidation of allenamides in the presence of comparably electron-rich dienes, and it provides a general entry to chiral nitrogen-substituted oxyallyl cation equivalents. Subsequent [4 + 3] cycloaddition reactions of these amide-substituted epoxyallenes or the corresponding nitrogen-substituted oxyallyls with dienes are highly diastereoselective. This stereoselective methodology constitutes a synthetically useful sequential epoxidation-oxyallyl cycloaddition manifold (see figure).

Three-dimensionally ordered macroporous (3DOM) ceramic materials show strong, predictable, and tailorable color changes based on the refractive indices (RI) of the void-filling material. The voids are uniform in size, close-packed, and interconnected through smaller windows (appearing as black ellipses in the micrograph of the figure). Chris Blanford, Rick Schroden, Mohammed Al-Daous, and **Associate Professor Andreas Stein** noticed distinct color changes when 3DOM samples of silica, alumina, or zirconia were immersed in solvents of different RI. The wavelength could be adjusted by changing the pore dimensions and the composition of the walls. The compositional diversity, relatively inexpensive starting materials, and high surface area of these materials suggest that they would make a good in *situ* RI sensor for flow applications.



# 2001 University of Minnesota Outstanding Achievement Av

The Outstanding Achievement Award is conferred on graduates or former students of the University who have attained unusual distinction in their chosen fields, professions, or public service, and who have demonstrated outstanding achievement and leadership on a community, state, national, or international level.

*Scholar of extraordinary insight, who developed new ways of thinking about the physical processes taking place in chemical reactions. Influential theorist, whose work in spectroscopy and molecular dynamics, caused a paradigm shift in chemical physics from the energy domain to the time domain, and who developed powerful computational methods for quantum mechanics. Leading scientist whose profound contributions are matched only by his ability to make his theories available to experimentalists and understandable to students.*

## Eric Heller

**B.S. 1968**

**Professor of Chemistry and Professor of Physics, Harvard University**

Eric Heller received his B.S. from the University of Minnesota in 1968 (Phi Beta Kappa, Magna Cum Laude) and his Ph.D. from Harvard in 1973. He carried out postdoctoral work at the University of Chicago and joined the faculty at UCLA immediately thereafter (1975), where he rose to full professor in 1981. In 1982 he moved to Los Alamos National Laboratory, and in 1984 he moved to the University of Washington. In 1993 he was recruited to Harvard to head the national Institute for Theoretical Atomic and Molecular Physics. Professor Heller is one of the most outstanding theoretical chemical physicists in the world. His unique insights into time-dependent quantum mechanics and semiclassical theory have changed the way everybody in the field thinks. He has been honored with several awards including the Glen T. Seaborg Award and fellowship in the American Physical Society, American Academy of Arts, and American Association for the Advancement of Science.

*Creative scientist and inventor, whose fundamental research work in fluorocarbon and fluoropolymer chemistry and his talent for tackling practical problems led the way to innovative commercial products. Conscientious and creative problem solver, whose research in hydrofluorocarbons is yielding promise for CFC replacements that will protect the environment. Respected mentor, honored alike by his colleagues and his profession.*

## Carl Krespan

**Ph.D. 1952**

**Research Associate and Research Fellow, Central Research and Development, E.I. du Pont de Nemours (retired)**

Carl Krespan received his PhD from the Department of Chemistry in 1952 under the tutelage of Professor C. Frederick Koelsch. From the University of Minnesota he moved to the Central Research and Development Labs at DuPont where he stayed for over forty years until his retirement. Much of his work centered on fluorocarbon and fluoropolymer chemistry. At the core of interest in this field is the strength and stability of the bond between carbon and fluorine. This is one of the reasons why Teflon™, the most widely recognized fluoropolymer, remains so important. The physical properties of Teflon, however, render it unusable for many applications where the C-F bond stability would be invaluable. Thus, a need existed to synthesize new materials with C-F bonds. Carl was responsible for developing new chemistry that led to several fluorinated polymers that had properties suitable for many new applications. During his career, he published 75 articles in journals or books and was an inventor on over 95 patents. Two notable awards recognized his expertise. Within DuPont he received the Pedersen Award in 1995. This award, named in honor of the DuPont chemist Charles J. Pedersen who shared the 1987 Nobel Prize in Chemistry, is the highest honor that DuPont bestows upon its scientists and engineers. The second award was a national award from the American Chemical Society (ACS) for Creative Work in Fluorine Chemistry. Carl's contribution to the field of fluorine chemistry also helped to elect him (not once, but twice) to the Chairmanship of the ACS Division of Fluorine Chemistry. For his many contributions to the Division, he received the Outstanding Performance award.

## Other Recent OAA Recipients

**2000 Newman Bortnick**
**BA 1941, Ph.D. 1944 Richard T. Arnold**
**Retired from Rohm and Haas Company**

**1999 John Baldwin**
**Ph.D. 1960 Lee I. Smith**
**Pharmacopeia Inc.**

## Reuben Rieke

**B.S. 1961**

**Regents Professor of Chemistry, University of Nebraska**

Reuben D. Rieke, received his B. Chem. degree with distinction from the University of Minnesota in June of 1961 and did his undergraduate research with Dr. Wayland Noland. He completed his Ph.D. at the University of Wisconsin-Madison in January 1966 with Dr. Howard Zimmerman. After a postdoc at UCLA with the late Saul Winstein, he began his academic professional career and is currently a Regents Professor at the University of Nebraska, Lincoln. In 1991 he founded Rieke Metals, Inc., making Rieke metals reagents commercially available and aiding the practice of chemistry enormously. Reuben has been very active in giving invited professional lectures and in presenting papers at scientific meetings, and has the impressive total of 204 publication and 15 U.S. patents. In his 44 years in chemistry he has received numerous awards and honors.

*Internationally renowned leader in the application of physical organic principles to synthetic organometallic chemistry. Innovative scientist whose discovery and development of activated metals has changed the way compounds are synthesized and has advanced methods for developing many pharmaceutical compounds. Articulate educator and spokesperson for the field of organic chemistry.*

## Richard Sundberg

**Ph.D. 1962**

**Professor of Chemistry, University of Virginia**

Richard (Dick) Sundberg received his B. S. degree in Chemistry from the University of Iowa in 1959. By August of 1962 he completed his Ph.D. with Dr. Wayland Noland at the University of Minnesota. Since this time he has become a world leader in indole chemistry as exemplified in his extensive research publications in the field, and publication of the definitive monographs in the field, "The Chemistry of Indoles" (1970) and "Indoles" (1996). After serving two years in the U.S. Army Chemical Corps, he began his academic career in 1964 at the University of Virginia, Charlottesville, where he has been ever since. The textbooks which he co-authored "Advanced Organic Chemistry, Part A and B"; now in their fourth edition, have been the classics in the field since 1983, and are used in graduate organic chemistry courses almost everywhere.

*World leader in indole chemistry, whose contributions to heterocyclic chemistry have found wide applications in organic synthesis and medicinal chemistry.*
*Consummate scholar and academic chemist, who is coauthor of the preeminent graduate text in organic chemistry, which is the standard in universities worldwide.*
*Excellent teacher and mentor, productive researcher, and successful administrator, who has had an immeasurable impact on the field of organic chemistry.*

# 2001 University of Minnesota Honorary Doctorate

Awarded to individuals who have achieved eminence in cultural affairs, public service, or a field of knowledge and scholarship.

## James Prestegard

**B.S. 1966**

**Professor of Chemistry & Eminent Scholar University of Georgia**

Native of Minnesota, James Prestegard received his B.S. from the University of Minnesota in Chemistry in 1966. He went on to the California Institute of Technology and received his Ph.D. in 1971. James began teaching at Yale in 1970 and was there until he took his current position as Professor and Eminent Scholar at the Complex Carbohydrate Research Center and the Departments of Chemistry and Biochemistry and Molecular Biology, at the University of Georgia in 1998. He received this honor for his work to advance the science of nuclear magnetic resonance (NMR) spectroscopy. He is known for fundamental work in the use of NMR to determine the structure and function of biomolecules, especially those that work in membranes.

*Because your fundamental work in NMR in biomolecules has made you an international leader in the field; because you have pioneered new and innovative NMR methods for obtaining a molecular understanding of the structure, dynamics, and function of biological molecules and systems; because, over the course of three decades, you have made major contributions to biochemical NMR, especially in the study of the membrane-associated molecules of proteins and carbohydrates; because you have enabled structural determinations of larger biomolecules than previously possible; because you are a true teacher-scholar, whose mentorship of numerous graduate and post-doctoral students has enabled them to become scientifically productive and to open new fields of science.*

**1998 David Golden**
**Ph.D. 1961 Bryce L. Crawford**
**SRI International**

**1996 Bob Gower**
**Ph.D. 1963 Edward Leete**
**Lyondell Petrochemical Company**

# Department Awards

## Staff

Without the support of a dedicated team of staff, the department could not function. Their duties were honored by the 2000 civil service outstanding service awards. Recipients were Sheryl Frankel (Principal Secretary), Bruce Moe (Manager, Computer and Electronic Services), Sean Murray (Assistant Scientist, Mass Spectrometry Lab), Joel Overlander (Accounting Supervisor), and Susan Wrayge (Principal Secretary). The 2001 recipients were Michael Casey (Principal Information Technology Professional, Computer and Electronic Services), and Stephen Philson (Senior Scientist, NMR Lab).

## Postdoctoral Associates

Kelly Higgins (Roberts) is the recipient of a Dreyfus Environmental Science Fellowship and James Xidos (Truhlar) is a Washington Avenue Bridge fellow in computational neuroscience. Jeffrey Potoff (Siepmann) as well as Titus Albu and Hisao Nakamura (Truhlar) were recipients of Minnesota Supercomputing Institute Research Scholar Awards.

## Graduate Students

Becky Eggimann, Benjamin Ellingson, Kimberly Kurtz, and Kathleen Schreck receive departmental fellowship awards while Nicholas Ergang, Aimee Erickson, John Lewin, Emily Luttman, Nathan Schultz, Adam Schellinger, Karla Wagenschultz and Amanda Wensman are Kolthoff fellows, and Anne Boreen, Angela DeGreef, Paul Nelson and Victor Sussman are supported by fellowships from the Graduate School. Also supported by departmental grants are graduate students Hui Xiong (Hsung) and Andrew Zalusky (Hillmyer).

The Department of Energy awarded Collin Wick (Siepmann) a Computational Science Graduate Fellowship and John Stubbs (Siepmann) received a DAAD (German Academic Exchange Service) fellowship. Amy Dounay (Forsyth) is supported by an Organic Chemistry Division fellowship of the American Chemical Society. Anne Reynolds (Tolman) and Nermeen Aboelella (Tolman) continue to receive fellowships from the National Science Foundation. Junliang Hao (Forsyth) and Gregory Dutton (Zhu) were awarded Graduate School Dissertation Fellowships. Jana Khandogin (York) and Rebecca Michelsen (Roberts) received Louise T. Dosdall awards and the recipients of the John Overend Awards for Graduate Research in Physical Chemistry were Bin Chen (Siepmann) in 2000 and Ahren Jasper (Truhlar) in 2001. Jason Thompson (Truhlar and Cramer) was awarded the Dirac Award for Outstanding Graduate Research in Theoretical Chemistry at the Midwest Theoretical Chemistry Conference.

Chris Kinsinger received a Departmental Teaching Internship Award. Mary Engler and Justin Lytle were the recipients of the Robert L. Ferm Memorial Outstanding TA Award. One of Mary's students wrote "Mary was the best TA I've had, not only in chemistry but in all my labs at the U." One of Justin's students wrote "Justin has a gift for teaching, and a level of dedication that far surpassed my expectations."

Nineteen graduate students received in 2001 BP Amoco and Chemistry Department travel grants, allowing them to attend various national conferences. Devi Kesavan, Evelyn Mayaan, Dongfeng Qi, Amy Saenger, Michael McLaughlin, Amy Dounay, Sherri Hunt, Teresa Lamm, Rebecca Michelsen, Heather Sklenicka, Bin Chen, Rick Schroeden, Hui Xiong, and Craig Zificsak attended meetings of the American Chemical Society. The other recipients of travel grants were Natalia Carulla and Simon Shannon (17th American Peptide Symposium), David Burleson (Gordon Conference), Minh Hong (Cold Spring Harbor Conference), and Evan Kaneski (National Organic Chemistry Symposium).

Civil Service award recipients, (back row) Sean Murray, Sheryl Frankel, Bruce Moe, (front row) Stephen Philson, Susan Wrayge and Michael Casey

Graduate student award recipients, Anne Reynolds, Collin Wick, Rebecca Michelsen, Nermeen Aboelella and Gregory Dutton.

Teaching award recipients, Justin Lytle, Mary Engler and Chris Kinsinger

# Undergraduate Fellowships and Prizes

## Senior Awards

**Peteris Auzins Memorial Scholarships** awarded to advanced undergraduates who have demonstrated outstanding achievement in undergraduate research in addition to overall scholastic excellence: Adam Froemming, Loren Swenson, and Julia Weinkauf. **David A. and Merece H. Johnson Scholarships** awarded to advanced undergraduates who have demonstrated outstanding achievement in undergraduate research in addition to overall scholastic excellence: David Flannigan and Angie Gergen. **The Kenneth E. and Marion S. Owens Scholarship In Chemistry** awarded to an advanced undergraduate who has demonstrated outstanding achievement in undergraduate research in addition to overall scholastic excellence: Marc Osborne.

## Junior Awards

**The Robert C. Brasted Memorial Fellowship** a fellowship as well as a part-time apprenticeship in the Department's General Chemistry Program awarded to an outstanding chemistry major who has expressed an interest in a teaching career in chemistry: Seth Nelsen. **The Lloyd W. Goerke Scholarships** awarded to a chemistry major who has shown outstanding academic achievement and who has financial need: Cuong Pham. **M. Cannon Sneed Scholarships** awarded to chemistry majors who demonstrate great promise for future achievement: Jamie Gergen and Andrew Presley. **George T. Walker Scholarship** awarded to a chemistry major who has shown outstanding academic achievement and who has financial need: Philip Imholte.

## Sophomore Awards

**Thomas DuBruil Memorial Awards** awarded to sophomores who have demonstrated outstanding achievement in undergraduate research in chemistry: Sarah Geers and Michael Puskarich.

## Freshman Awards

**The Sally Herz Memorial Scholarships for Entering Freshman Chemistry Majors.** Awarded to entering freshman declared as Chemistry majors who show great potential: Amos Anderson, Kim Ha, Michael Missaghi and Emily Que.

**J. Lewis Maynard Memorial Prize in Advanced Inorganic Chemistry.** This award is given for outstanding scholastic achievement in advanced inorganic chemistry: Emily Luttman.

**CRC Freshman Chemistry Achievement Award sponsored by the CRC Press, Inc.** This award consists of the latest CRC Handbook of Chemistry and Physics and is given to a freshman chemistry major for outstanding scholastic achievement in freshman chemistry: David Adrian.

**Merck Index Award sponsored by Merck & Co., Inc.** This award consists of the latest edition of the Merck Index and is given to a sophomore chemistry major for outstanding scholastic achievement in organic chemistry: John McKeen and Ryan Waletzko.

**Undergraduate Award in Analytical Chemistry sponsored by the Division of Analytical Chemistry of the American Chemical Society.** This award consists of a year's subscription to the journal, Analytical Chemistry and is given for outstanding scholastic achievement in analytical chemistry: Bob Poe.

**George T. Walker Prize in Chemistry**, sponsored by the University of Minnesota Chapter of Sigma Xi, the Scientific Research Society: Angie Gergen.

**Robert C. Brasted Outstanding Undergraduate TA Awards.** This award was established in 2001 in honor of Robert C. Brasted, Professor at the University of Minnesota from 1947 to 1986 and former Director of General Chemistry for more than 25 years. Dr. Brasted's strong commitment to teaching and education earned him fifteen teaching awards including: the American Chemical Society Award in Education, The Chemical Manufacturers Award, The James Flack Norris Award of the Boston ACS Section, the John Kuebler Award of Alpha Chi Sigma and the Mosher Award of the California Section. He was the only person to receive all five of these awards. The Brasted Outstanding Undergraduate TA Awards recognize outstanding contributions to teaching by undergraduate assistants: Angie Gergen and Julia Weinkauf.

Seniors Maisy Liao, Angie Gergen, Marc Osborne, and juniors Jamie Gergen and Cuong Pham at the Recognition Reception May 4, 2001.

Senior Adam Froemming with research advisor Tom Hoye.

A portion of the graduating class of 2001 at the Recognition Reception prior to IT Commencement.

# Faculty Awards

We are very pleased that several of our faculty have won prestigious awards recently.

Mark Hillmyer and Richard Hsung were named **McKnight-Land Grant Professors**. Hillmyer received this distinction for his promise as a young researcher in the area of polymer chemistry, and Hsung for his dynamic research program in the field of organic synthesis.

Bill Tolman and Tim Lodge were chosen as **Distinguished McKnight University Professors**. Tolman was chosen for excellence in research and contributions to teaching/advising and to the wider community. Lodge attained this distinction for being internationally recognized as a leader in his field and for a remarkable record of service to the Department and University.

Larry Miller received the title **Institute of Technology Distinguished Professor**, which recognizes exceptional contributions in teaching and research and commitment to the Institute. Miller was recognized for his unique style of teaching, creative research, and service and joins Wayne Gladfelter, Louis Pignolet, and Don Truhlar, giving the department four holders of this honorary title.

Gary Gray has been named the **Mr. and Mrs. George W. Taylor Distinguished Teaching Professor** for his dedication and outstanding contributions to the entire range of college education through teaching, advising, or program development.

Don Truhlar has been appointed the first holder of the **Lloyd H. Reyerson Chair of Chemistry**. This chair is named after Lloyd H. Reyerson, who was a distinguished member of the department's faculty from 1919 to 1961.

David Blank and Richard Hsung were awarded **Camille & Henry Dreyfus Foundation Distinguished New Faculty Awards**. Blank received the award for the promise of his research and teaching on projects that cross traditional area boundaries. Richard Hsung also received another young scientist award, an **Alfred P. Sloan Foundation Research Fellowship**. These awards were given to recognize his outstanding teaching and his establishment of a dynamic research program in organic synthesis.

Karin Musier-Forsyth and Doreen Leopold received the **George W. Taylor/IT Alumni Society Distinguished Research, Service, and Teaching Awards**, respectively. Musier-Forsyth received this award for her outstanding research in RNA-protein interactions at the molecular level. Pignolet received this award based on his service within the University and outreach and community service. The award was conferred upon Leopold for her teaching at the University of Minnesota. Previous departmental recipients of these three awards include Chris Cramer, Gary Gray, Ken Leopold, Kent Mann, Bill Tolman, and Don Truhlar.


Larry Que received the University's **Distinguished Teaching Award** for his outstanding contributions to the education of graduate and postgraduate students at the University, his mentoring within the context of a forefront research program, and his leadership of interdisciplinary, interdepartmental organizations that provide a unique learning environment.

Craig Forsyth visited Japan under the **Japan Society for the Promotion of Science**. While there, he gave 13 lectures at locations from Sapporo to Kyoto, and he ate a considerable amount of sushi.

Chris Cramer received a **Guggenheim Fellowship** for a sabbatical in Barcelona, Spain to further his research interests in the structure and reactivity of chemical and biological systems.

Peter Carr received the **Eastern Analytical Symposium Award for Outstanding Achievements in Separation Science** for contributions to understanding the mechanism of retention in chromatography in general and of retention in reversed phase liquid chromatography.

Bill Tolman received the **Buck-Whitney Award** sponsored by the American Chemical Society Eastern New York Section to recognize excellent original contributions to pure and applied chemsitry. Tolman received this award for his work in NO metabolism, electron transfer, oxygen activation, and catalysts for the synthesis of biodegradable polymers.

Jiali Gao was given the **Dirac Medal of the World Association of Theoretically Oriented Chemists** for his research developing computational methods that combine quantum mechanics with force fields for the study of chemical reactions in solution and in enzymes and the molecular mechanism of enzyme catalysis. The award is given annually to a scientist under age 40.

Don Truhlar received the **American Chemical Society Award for Computers in Chemical and Pharmaceutical Research** for his pioneering work combining theoretical and computational chemistry to further our fundamental understanding of chemical reactivity and molecular interactions through visionary accomplishments in the areas of potential energy functions, accurate quantum dynamics, variational transition state theory, and the use of electronic structure theory for calculations of reaction rates and solvation effects.

Karin Musier-Forsyth received the **Pfizer Award in Enzyme Chemistry**, sponsored by the American Chemical Society Division of Biological Chemistry. Professor Musier-Forsyth received this award based on her work in the multi-disciplinary field of nanotechnology and her ground breaking research in RNA-protein interactions.

# Many Thanks To Our Donors

**Industrial support** to education is a boon to both academia and industry. The strength of this partnership is the key to the future of chemistry in this country, for top universities provide the high caliber individuals who will tomorrow lead the very companies who have invested in them today. Special projects, including matches for equipment grants, the departmental portion of set-up packages for new faculty, and summer support of graduate students, are made possible only through the generosity of our friends in industry. Some companies provide support directly to the research programs of faculty members whose basic research is important to their applications. On behalf of the department, its faculty and staff, and the student beneficiaries of this generosity, we thank the following companies and educational foundations for their support in 2000.

**BP Amoco Foundation**
**Bristol-Myers Squibb Company**
**Dow Chemical Company Foundation**
**DuPont Company**
**James Ford Bell Foundation**
**Pfizer, Inc.**
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**3M Company**
**Union Carbide Foundation**

**Companies with matching gift** policies help to ensure that industrial donations are consistent with public sentiment about the merits of charitable giving. Such programs vary from one-to-one to three-to-one matching ratios. We thank the following companies for their donor matches in 2000.

**Air Products Foundation**
**BP Amoco Foundation**
**B F Goodrich Company**
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**Texaco Foundation**
**3M Foundation**
**Waters Corporation**

## A Special Thanks to Dow Chemical Foundation

On October 9, 2001 Larry Ito (Ph.D. '90) from Dow Chemical presented the department with a check for $100,000 from the Dow Chemical Foundation. This very generous donation will be augmented with an additional $100,000 in each of the next two years. These funds are designated to help build the new Instrumentation Facility that will eventually house our NMR spectroscopy, mass spectrometry, and X-ray diffraction laboratories. We have many former students and friends at Dow and would like to express our deep appreciation for their support of this wonderful gift.

# Individual Donors

Memorial funds are a most fitting remembrance of those whose contributions to science and to society deserve special recognition. These funds and their 2000 contributors are: **Robert C. Brasted Memorial Fellowship Fund**, Ieva O. and George E. Hartwell; **Thomas P. Du Bruil Memorial Fund**, Ann C. Brey, Paul D. Brey, Justine and Thomas W. Du Bruil, Francis J. and Theresa B. Haddy; **Margaret C. Etter Memorial Lectureship in Materials Chemistry**, Elise A. Sudbeck; **David & Mereece Johnson Memorial Fund,** anonymous; **Albert J. Moscowitz Memorial Lectureship In Physical Chemistry Fund**, Mary E. Learmont and Steven C. Riemer; **Overend Memorial Fund**, Thomas G. Goplen; and **John Wertz Fellowship in Chemistry**, Florence C. Wertz

A number of other funds have been created for special purposes, usually at the request of the donor for specified purposes. These funds and their 2000 benefactors are: **Crawford Fund** (supports a student-run lecture), Richard G. Inskeep; **Kenneth E. and Marion S. Owens Scholarship In Chemistry Fund**, Kenneth E. and Marion S. Owens; **Graham N. Gleysteen Fellowship in Chemistry**, Agnes Gleysteen Fraser Estate; **Goerke Undergraduate Fellowship Fund**, Lloyd W. Goerke; and the **Wayland E. Noland Research Fellowship Fund,** Rodney D. De Kruif, Lee E. Klade, and Wayland E. Noland. and the **Wayland E. Noland Graduate Fellowships in Organic Chemistry**, Wayland E. Noland.

Individual support from our alumni and friends is crucial to the myriad activities of our department. Thanks to your generosity, we have been able to offer fellowships and scholarships to our outstanding students, retain our best faculty, and implement projects with will improve our facilities. The **Chemistry Special Projects Fund** is the department's main discretionary fund, which supports student fellowships and awards as well as the bulk of the other activities mentioned in this newsletter. With gratitude, we acknowledge our 2000 donors.

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Richard J. Legare
Nicholas C. Lehman
Wu-Shyong Li
Arnold A. Liebman

## Fall 2001 Kolthoff Lecturer

**Professor J. Mike White**
**University of Texas - Austin**

## Spring 2002 Kolthoff Lecturer

**Professor John Bercaw**
**California Institute of Technology**

The **Kolthoff Fund** was anonymously endowed in 1976 for the purpose of establishing a prestigious lectureship series. Each semester, the eminent scientist chosen as Kolthoff Lecturer visits our campus for a week's residency, presenting a series of public lectures, and interacting with our faculty and students. The Kolthoff Fund also supports a Kolthoff Fellowship for an outstanding first year graduate student. Donors during 2000 were: Madolyn Youse Babcock, Miran K. Chantooni, Jr., Grace Po-Yuen Chiu, Johannes F. Coetzee, Charles M. and Linda C. Hall, Albert C. Holler, Edward F. Levy, and Yutaka Okinaka.

## Fall 2001 Gassman Lecturer

**Professor Paul Wender**
**Stanford University**

## Spring 2002 Gassman Lecturers

**Professor Larry Overman**
**University of California - Irvine**

**Professor Barry Sharpless**
**The Scripps Research Institute**

The **Paul G. Gassman Lectureship Fund** brings a Gassman Lecturer in organic chemistry to our campus each semester. 2000 Donors were: Jonathan and Janice Chasman, Paul A. Deck, John H. Dygos, Gerda A. Gassman, Gordon W. and Loyse B. Hueschen, Diane B. Neimann, and D. James Schreck.

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Richard V. Soderberg
Paul B. Sollman
Quentin F. Soper
Matthew S. Sorenson
Anne Spinks
Barbara J. Stallman
Daniel J. Stevens
Robert E. and Debra R. Stevens
Mary P. Stickelmeyer
Joseph F. Stieber
Roger W. Strassburg
Melvin P. and Dorothy B. Stulberg
Elise A. Sudbeck
Joseph C. Suhadolnik
Richard J. Sundberg
Jerome D. Swalen
Dale G. Swan
April J. Swanson
Lynn M. Swanson
Robyn M. Tan
Khalid A. M. Thakur
Donald R. Theissen
James R. Throckmorton
Steven J. Tinker
Wade J. Tornquist
John R. Van Pilsum
Gregg A. and Marcia M.Vandesteeg
Richard E. Volkmann
James J. and Elizabeth R. Wade
Terence C. Wagenknecht
Mary J. Wahlstrom
Joseph and Carolyn Warden
Mark W. Watson
Edward O. Welke
Percy A. Wells
Edward L. Wheeler
Larry R. Wilson
Larry D. Winter
Laura R. Wolszon
James T. Wolter
Ellen L. Wu
Frank Z. Yang
Thomas K. Yue
Lee R. Zehner
Patrick G. Zimmerman
Michelle M. Zirngible

## 1930's

**John Anthes** (B.S. '34 Ph.D. '39 Koelsch)
I retired in '76 from Dravo Corp. which at that time was an engineering-construction company. We retired to North Carolina. In '94 we got tired of the bugs and dampness in NC and moved to Arizona where my wife Frances and I now live. We have three children: Jeanne in Buffalo NY, Janet in Houston TX and John Jr. in Seattle WA.

## 1940's

**William Horwitz** (Ph.D. '47 Crawford)
Dr. William Horwitz received the prestigious Robert Boyle Medal of the Royal Society of Chemistry at a meeting in Newcastle UK in January 2001. Dr. I. M. Kolthoff was the first recipient of this award. The citation read "Distinguished for his contributions to the quality of analytical measurements and to the statistics of data treatment, including the discovery of the Horwitz function, which relates the reproducibility of such measurements to analyze concentration." Dr. Horwitz joined the US Food and Drug Administration in Minneapolis in 1939 and retired as Scientific Advisor in their Washington laboratory in July 2001.

## 1950's

**Jim Bleasdale** (Ph.D. '50 Parham)
I retired from DuPont in '83, then started a computer repair and consulting business operating from my home. The government requires too many forms and stuff to encourage this activity, but did so for 15 years. Have now completely retired and golf on M/W/F no hunting/fishing/chemistry. Would like to hear from any classmates.

**Charles Hammer** (Ph.D. '59 Noland)
I am retired from Georgetown University's Chemistry Department where I taught for 32 years. I had 26 PhD and 9 MS students from '63 to '97 when my last PhD student received his degree. I have continued to work in my garage lab here in New Mexico and have my 80th paper coming out in the Journal of Agricultural and Food Chemistry soon. In '96 I set up the Hoya/NM Schools Chemobile in which I visited 25 high schools in northern New Mexico two times per semester. I had to stop this long distance travel (sometimes 250 miles away) because of my diabetes.

Now I participate in only two professional activities. I co-teach an Honors Chemistry course at the Santa Fe Indian School and I am president (recently) of the governing board of a public charter school called the Academy for Technology and the Classics (ATC) here in Santa Fe. We are just beginning our 2nd year at ATC, but like many new charter schools we do not yet have a permanent home. Our school goes from grades 7-11 this year and will be complete next year. We have a unique curriculum that marries classical studies with science and computer technology. The Honors Chemistry course at SFIS is a little different also. It combines ethnobiology with chemistry. The Indian students are investigating the chemical components of native medicinal plants. We use preparative TLC to separate the components and UV-Vis and FT-IR spectra to characterize the compounds obtained. We could really use an HPLC for this work.

**Rudy Pariser** (Ph.D. '51 Livingston)
I retired from DuPont as of '89 where I last held the position of Science Director in Central Research and Development. Since then, I have my own consulting company dealing with R&D management as well as educational issues, e.g., I have been involved in initiating a continuing education outreach program for engineers at the University of Delaware. I continue to reside with my wife Louise Marsh in Hockessin, DE. Our hobbies include ballroom dancing and traveling.

**Richard W. Ramette** (Ph.D. '54 Sandell)
Dick Ramette taught chemistry at Carleton College from '54-'90, before retiring. He and his wife, Lee, now live in sunny Arizona, having decided that 46 Minnesota winters were more than enough of cold weather.

**Charles Wright** (Ph.D. '56 Parham)
I retired in '90 from 3M after 34 years of service. My research broadly involved polymers with concentration in adhesives. There are 22 patents in my name. Perhaps the largest contributions were in encapsulated locking adhesives which were precoated on bolts and in high strength adhesives in syringes for easy application. After retirement I have concentrated in teaching and funding Christian meditation in its various forms.

## 1960's

**George Detrick** (M.S. '69 Noland)
Living in West Linn, Oregon. Retired after thirty years with Rohm and Haas Company. Currently involved with real estate.

**Joseph F. Dooley** (Ph.D. '67 Parham)
Dr. Dooley is currently the author of a soon to be published book called "The Coming Cancer Breakthroughs" , Kensington Publishers, New York. Dr. Dooley is a scientist, entrepreneur and writer, who founded a worldwide biotechnology consulting firm, Biotechnology Associates, based in New York City. He currently divides his time between New York and Connecticut.

**Alan R. Hargens** (B.A. '66)
I received my BA degree, Summa Cum Laude, in Chemistry from the University of Minnesota in '66, and my Ph.D. in Marine Biology from Scripps Institution of Oceanography, University of California, San Diego in '71. I am currently a Professor of Orthopaedics at UCSD, Senior Scientist at NASA Ames Research Center, and Consulting Professor at Stanford University. I specialize in orthopaedic and clinical physiology with recent research concerning gravity effects on the cardiovascular and musculoskeletal systems of humans and animals. I have edited six books and published more than 200 peer-reviewed articles, 40 chapters, 40 NASA Reports, and 380 abstracts in general areas of chemistry and cardiovascular and musculoskeletal physiology. And also hold four patents. I am a Fellow of the American College of Sports Medicine and a Fellow of the Aerospace Medical Association, an Associate Editor of the Journal of Gravitational Physiology and the recipient of a NIH Research Career Development Award, Elizabeth Winston Lanier Award, and two NASA Honor Awards along with many professional affiliations.

**Larry A. Haas** (M.S. '64)
Received my MS in Inorganic Chemistry in '64. I worked over 33 years for the US Bureau in Mpls. I retired in Sun City, AZ in '94 where I enjoy it very much.

**Richard Legare** (Ph.D. '62 Lumry)
I am retired after 34 years with Hercules Incorporated. About 14 of those years were spent working on rocket propellant at Cumberland, MD and Bacchus, UT. I worked about 20 years on Polypropylene fibers mostly at Covington, GA. Much of that work was for disposable diaper coverstock and related products. My first wife, Cecile, died of breast cancer in '91. I re-married in 2000. We live in Conyers, GA, outside Atlanta. I have lived here since '78. I do mostly traveling, gardening and home repair these days. I would love to hear from/about friends, professors and classmates at the U of M.

## 1970's

**Joe Abdallah** (M.S. '74 Truhlar)
I left UMN for a job at Computer Sciences Corp. in Maryland back in '74. In '78, I was hired by Los Alamos National Laboratory in T-Division as staff member and I have been here ever since. My work mainly involves the modeling of non-equilibrium high temperature plasmas; where the emphasis is on computer simulations and atomic physics/kinetics. I would love to hear from anyone old enough to remember me.

**David S. Beebe** (B.A. '75)
Following graduation I attended the University of Minnesota Medical School, graduating in '79. I completed training in general surgery and anesthesiology at the University of Minnesota in '85 and, after a brief stint in North Dakota, have been on the faculty of the medical school at the University of Minnesota ever since. I am currently a professor of anesthesiology and vice-chairman (acting) of the anesthesiology department. I have been married to my wife Martie for 21 years and have 3 daughters. We live at 60 Indian Hills Drive, Circle Pines, Minnesota 55014

**Conrad H. Bergo** (Ph.D. '72 Koelsch)
I am a Professor of Chemistry at East Stroudsburg Univ. I recently delivered lectures at Middle Tennessee State Univ. in Murfreesboro, Tennessee and at Appalachian State Univ. in Boone, North Carolina. I was the invited speaker at a meeting of the Sigma Xi Chapter at Middle Tennessee

State Univ. where I spoke on Chemicals in the Marketplace-Thailand. I was also invited to speak to students and faculty in the Chemistry Departments of Middle Tennessee State Univ. and Appalachian State Univ. The talks related results of research carried out in Thailand and at East Stroudsburg Univ. on chemical processes used in the silver, gold, and orchid industries in Northern Thailand. I reported on compounds in foods and spices that contribute colors and flavors. These ingredients and spices enhance and contribute to the uniqueness of Thai food.

**Maynard Brandt** (M.S. '75 Truhlar)
I am a Senior Programmer/Analyst for Cray HPC Benchmarking, where I work on SGI Supercomputer Systems, the fastest computers in the world. Cray HPC Benchmarking consists of people who are knowledgeable in code optimization, system performance, and system configuration for the Cray SV1, Cray T3E-1200E, and Cray T90 supercomputer systems. I help optimize customer programs, certain published benchmarks, and certain application programs to achieve peak performance on those systems. Employment History: National Bookkeeping and Tax Service, Minneapolis, MN, '78-'79, Control Data Corporation, Bloomington, MN, '79-'85, ETA Systems, Inc., St. Paul, MN, '85-'89, Multiflow, Inc., Branford, CT, '89-'90, Cray Research, Inc., Eagan, MN, '90-'96, Silicon Graphics Inc., '96-current.

**Tom Briden** (B.S. '73)
I graduated from the U of M in March of '73. I went into the USAF pilot training program in April of '73 and returned to fly with the Minnesota Air National Guard and Illinois Air National Guard for 20 years. Between flights I taught high school math and science in St. Paul Minnesota from '74-'75. I spent my next 4 years as an air traffic controller and airspace system engineer for the FAA in Minneapolis. I now fly as a Captain on Boeing 767's for American Airlines in Chicago, Illinois. I married my grade school sweetheart, Joyce, and we have 3 lovely children. The youngest hopefully will attend college in Minnesota 2 years from now. Joyce also attended the U of M for 2 years and eventually graduated from Northern Ill. Univ. a while back. She now teaches in an elementary school as a health and science instructor. We maintain close ties with some old friends "up north" but I have lost contact with all of my Chemistry major peers.

**Kay (Lampe) Craighead** (B.A. '69, Ph.D. '73 Bryant)
I am teaching chemistry and physical science at St. Thomas Academy in Mendota Heights MN.

**Keith R. Johnson** (B.A. '70 Overend)
Professor in the Department of Oral Biology, College of Dentistry and the Eppley Cancer Center at the Nebraska Medical Center in Omaha.

**Tom Stavros** (Ph.D. '71 )
Retired.

**Charlie Kolpin** (Ph.D. '77 Swofford)
Retired from 3M after 20 years on 10/12/01.

**Linda Rochford** (B.S. '78)
Currently I am the department head and associate professor of marketing at UMD. I delivered a course on developing and marketing new products, offered for the first time this past summer at UMD in the School of Business and Economics. Student teams were sent out to study the new product development processes of six different technology and manufacturing related companies as part of the class.

**Douglas Root** (B.A. '77)
Ph.D. Univ. of Arizona, 1984. Presently: Director Quality Assurance, CIMA LABS Inc., Eden Prairie, MN. Back in Minnesota after riding the start-up company wave in California with Shaman Pharmaceuticals and Cygnus Transdermal Systems.

**Jeffrey Sholl** (B.A. '72)
After completing a MS in Food Chemistry in '75 I joined Pillsbury in R&D where I spent 15 years. I migrated into a marketing function and joined Haagen-Dazs after its acquisition by Pillsbury. While at Haagen-Dazs I developed the Haagen-Dazs ice cream bar and have spent many years being accused of adding many inches to Americas waistline. I currently own a business with offices in Mpls; Monterey, CA; and Idaho Falls. This business markets fresh fruits and veggies under the Green Giant brand.

## 1980's

**Pauline (Spadaccini) Arabanos** (B.S. '80)
Moved to Huntington Beach, CA in '84. Worked for Battery Sales Management & Design from '80-'98 for major battery manufacturers. Now own and operate Home Buddies Pet Sitting - an in-home pet service for dogs, cats, birds.

**Frank Blum** (Ph.D. '81 W.Miller)
For 2000-2002 I am the chair of the ACS Committee on Divisional Activities. This Committee is responsible for the approximately 115,000 ACS Division memberships.
I was also awarded the 2001 Distinguished Alumni Award from Eastern Illinois University, Charleston IL.
http://www.eiu.edu/~alumni/awards/

**Steven Bonser** (Ph.D. '83 Gassman)
I began working for Eastman Kodak Company December of '82. I am currently a Senior Development Chemist in their Imaging Chemicals Technology Unit. I am a Project Leader, responsible for the development of new chemical syntheses and robust chemical processes for new chemicals slated for new products. Currently, I am involved with the design and development of fairly complex polyaromatic fluorescent dyes to be used in the new Organic Light Emitting Diode technology for flat panel display applications, a field in which Kodak is the world leader. I am also involved in the chemical development of new, complex heterocyclic dyes to be used in the Color Proofing/ Publishing world. I also am a Senior Ph.D. Recruiter for the R&D Laboratories for Eastman Kodak. From 1991-1993 I was a Visiting Scholar at Harvard University under the direction of Prof. George Whitesides.
Catherine and I have been married for 21 years. She is also employed by Eastman Kodak Company where her titles are Dir. of Strategy, Global Manufacturing & Dir. New Business Development, Global Manufacturing. We have 2 children, Aaron, 16 and Laura, 14.

**Matthew Callstrom** (Ph.D. '87 Gassman)
MD: Mayo Medical School '97
Residency: Mayo Graduate School of Medicine, Diagnostic Radiology '97-'01 Joining staff at the Mayo Clinic in Diagnostic Radiology July 2002. Research programs involving molecular imaging and percutaneousradio-frequency ablation of neoplastic tissue. My wife, Brenda and I have two children: Joseph (11) and Peter (8).

**Sumana Chakrabarti** (Ph.D. '82 W. Miller)
Currently a Senior Research Scientist at the Pillsbury Technology Center (330 University Ave. S. E., Mpls. MN 55414, Tel: 612 330 859) email: Schakrabarti@pillsbury.com

**Michael DiPierro** (Ph.D. '84 Mann)
I live in the northern Chicago suburbs with my wife Barb. Barb is an elementary teacher, specializing in English as a second language. I am technical director at Ferro Pfanstiehl, a bulk pharmaceutical and fine chemical manufacturer in Waukegan, IL. When I left MN in '84, I spent a year-and-a-half postdocing at Indiana University. Bloomington was great. I went from there to Pittsburgh for two years spent at PPG Industries learning polymer chemistry and the art of making paint, then onto Union Carbide in Bound Brook, New Jersey again in applied polymer chemistry. '90 brought me back to Illinois to work for Abbott Laboratories in pharmaceutical process development - a mixture of laboratory, pilot plant and manufacturing of pharmaceutical intermediates and drugs. Much like what I continue to do at Ferro Pfanstiehl. mjdipierro@hotmail.com.

**George Dohmann** (M.S. '83 Leete)
I left Minnesota to become a Peace Corp Volunteer in Belize where I taught high school science. Upon my return, I worked at as a chemist at Ciba-Geigy and attended law school in the evening. I am currently a patent attorney at Novartis Pharmaceuticals. I live in Flemington, NJ with my wife and two children.

**John A. Jackson** (B.A. '82)
In '84, he started graduate school at the University of Iowa, receiving his Ph.D. in Organic Chemistry in '90, while working with Professor David F. Wiemer. The title of his dissertation was "New Chemistry of a-Phosphono Lactones." In the spring of '90, John joined the laboratory of Professor Charles M. Thompson in the Chemistry Department at Loyola University Chicago as a postdoctoral research associate. While at Loyola, John worked on the synthesis of biologically active chiral organophosphorus compounds. In the fall of '92,

John accepted a Visiting Assistant Professor position in the Chemistry Department of Mansfield State University, in Mansfield, Pennsylvania. John returned to Chicago during the summer of '93, working again with Professor Charles M. Thompson at Loyola University. In the fall of '93, John began his current position as an Assistant Professor in the Department of Chemistry at Youngstown State University. In '98, he was granted tenure and promoted to Associate Professor. Dr. Jackson is a member of the American Chemical Society (Organic Div., Agrochemicals Div.) and The Council on Undergraduate Research (CUR).

**Carlos H. Juarez** (Ph. D. '90 Munck)
After graduating I took a job with the chemicals division of Eastman Kodak. In '93, the chemicals division became an independent company and it is known as Eastman Chemical Company. I have had several assignements. Currently, I am the technical coordinator of the optical spectroscopy group of our research organization. Some of our research relates to the study of polymers under physical deformnation by dynamic infrared dichroism. Our lab has other functions. For example, we provide support to our world wide manufacturing units in the development of analytical methods based on Raman, fluorescence, near infrared, far infrared and X-ray fluorescence spectroscopies. We also have a program to develop analytical methods based on chemometric techniques coupled to raman spectroscopy for on line applications.

**John B. Lynch** (Ph.D. '89 Que)
I have recently moved up to the Boston Area to take a job with Millipore Corporation after 9 years with W.R. Grace. I am managing technology projects involving polymer surface and materials science in support of the development on new porous separation media. Besides the challenging work in Boston, I have the added benefit of getting together with Vaughn Miller ('90) and Joe Schroeder ('88). This year, my wife, Kathy, and I are celebrating 10 years of marriage and the 1st birthday of our daughter, Kerry. john_lynch@millipore.com

**Gary S. Proehl** (Ph.D. '80 Gassman)
'80-'98 - Chemist at Eastman Kodak Co. in Rochester, NY '98-'01 - Senior Scientist at Eisai Research Institute, Chemical Development Division in Andover, MA doing pharmaceutical process development work involving late-stage process optimization using statistics and computer-controlled reactors (Eisai Research Institute is part of Eisai Chemical headquartered in Japan) Currently a member of the American Chemical Society and the American Statistical Association.

**Alayne L. Schroll** (Ph.D. '86 Barany)
I just completed my fifteenth academic year at St. Michael's College in Colchester, VT; I continue to Chair the Chemistry and Physics Department . I'll continue in this position for at least three more years. My primary teaching responsibilities are biochemistry lectures and labs, and organic chemistry labs. My research is currently focused on writing up DNA chemical footprinting work that I did at the University of Vermont. Address: Department of Chemistry and Physics, Saint Michael's College, Colchester, Vermont 05439 E-mail: aschroll@smcvt.edu Phone: 802-654-2378

**David Schwenke** (Ph. D '85 Truhlar)
Dec. '86 - arrived in sunny California after an exciting journey from Minneapolis in a 25 year old car. Jan - Mar '87 - worked days as a rocket scientist for the Computational Chemistry Branch, NASA Ames Research Center, worked weekends on 26 year old car. April '87 - bought a "new" 4 year old car. Sept. '88 - Employers liked me enough to make me a civil servant. April '93 - promoted to maximum G.S. rating. '95 - Employers liked me enough to make me an Ames Associate Fellow. '93-'97 - My career as a Broadway Musical violinist (The Fox Theatre on Broadway in Redwood City, CA). I kept my day job. '95 - '96 - I was in hot water (H. Partridge and D.W. Schwenke, J. Chem. Phys. 106, 4618 (1997)) '97 - Life gets better - I meet Cynthia Marie Hicks. '98 - Married Cynthia Marie Hicks. '97 - '00 - I am up to my nose in methane.

**Daniel Siu** (M.S. '89 Que/Muenck)
Currently, I am a product manager for genetic analysis software products at Applied Biosystems/ Applera Corporation in Foster City, CA. Although my job now has more to do with molecular genetics than chemistry, a lot of the analytical skills I picked up as a graduate student are still very useful. It actually feels pretty good these days: to be a part of a team that provides software tools to those who raced to complete the Human Genome Project using the ABI 3700 DNA Sequencers. In this domain, researchers are now moving fast to discover relevant genetic markers (SNPs) using the available human genome data. Hopefully we can make some contributions in this area by providing tools to speed up the discovery process. My email is SiuDC@AppliedBiosystems.com.

**Rex Skodje** (Ph.D. '83 Truhlar)
After leaving Don's group back in '83, pennyless I might add, I took a postdoc position with Bill Reinhardt in Boulder. No sooner did I arrive in Colorado than Bill announces his imminent departure for Univ. of Pennsylvania. So I decided to do a quick project (adiabatic switching) and re-enter the postdoc market. But a funny thing happened on the way to the unemployment office, Univ. of Colorado actually offered me a faculty job! Being the ever shrewd negotiator, I took the first thing they offered and I have been (more or less) merrily doing theoretical chemistry here ever since. In my work I have enjoyed exploring a number of new areas for me, semiclassical quantization, nonlinear dynamics, chaotic scattering, wavepacket dynamics, surface catalysis, adlayer coarsening, thin film kinetics, atmospheric chemistry, and even some reaction dynamics. Last year I took a year long sabbatical to recover my sanity (it didn't work), and I spent quite a long time in Taiwan working with our old friend Kopin Liu. As luck would have it, Kopin obtained the first conclusive evidence for a reactive resonance in a beam experiment (F+HD) while I was there, and I found myself first in line to do the theory. So, after all these years it seems I am back to working on my first project with Don. Anyway, it was a great experience working in Don's group and I have good memories of those days and my fellow students.

**Rachel Slade** (B.S. '89)
After graduating from MN, I went to graduate school at the U of Oregon, and got my PhD in '95 working on radicals in organic synthesis with Bruce Branchaud. Since then, I've entered the world of small biotech companies (Darwin Molecular in Seattle, WA; Siddco in Tucson, AZ; currently Myriad Pharmaceuticals in Salt Lake City, UT). In '99, I married a nice analytical/ physical chemist that I met in grad school (who postdoc'd for Paul Barbara at U of MN in '96-'97), and who is now an Asst. Prof. at the U of Utah. I now hang out in Salt Lake City (anxiously dreading the arrival of the 2002 winter olympics), along with fellow U of MN alums Shelia David, Thanh Truong, and Colleen & Eric Hegg, enjoying the very mild winters and learning how to downhill ski.

**Susan C. Tucker** (Ph.D. '89 Truhlar)
After leaving MN, Jim Ball and I travelled through Europe for 2 months...we got to see all the East Germans who never left Hungary ('89). This was followed by a post doctoral stint at Columbia Univ. in NYC. I was thus exposed to both condensed phase rate theory (with Bruce Berne and Eli Pollak) and very excellent food. Not to mention a high (pre-Giulliani) crime rate. After leaving NYC, Jim and I spent 3 weeks on a boat off the Baja pennisula and successfully observed a full total eclipse of the sun. From there I headed off to my current position as a faculty member in chemistry at UC - Davis, where I've finally made Full Professor. I study primarily condensed phase solute dynamics, with an emphasis on supercritical fluids...this latter is the source of all of my fame and fortune (what little there is). To learn more about this work, please check out my perpetually outdated web-site at: http://www-chem.ucdavis.edu/people/tucker.shtml. The gossip is that Jim is now working for a biotech company on the East coast and is married to someone other than me. My cats and I train in Tae Kwon Do and snowboard when we're not working.

**Mike Van Lente** (Ph.D. '87 L. Miller)
I've been a Senior Scientist here at Environmental Test Systems, Inc., in Elkhart, Indiana, for over six years. I am presently part of the Technology Group, which is charged with bringing new technology into the organization in one way or another. We make colorimetric test strips for various purposes including swimming pool testing, soil testing for home

gardeners, and residual peroxide testing to serve the needs of medical facilities. ETS is in one building plus a neighboring warehouse; we have a total of about 50-60 employees (down from 90+ a year or two ago). We are part of Hach Company, which is involved in many aspects of water testing. Hach is, in turn, part of Danaher Corporation, a $3+ billion/yr company that is traded on the NYSE.

**David A. Weil** (Ph.D. '84 Dixon)
Senior Research Specialist at 3M Corporate, Analytical Technology Center 201-BW-09, St. Paul, MN 55144 651-737-5284 daweil@mmm.com

**Chuck Winter** (Ph.D. '86 Gassman)
Chuck Winter is currently Professor and Associate Chair of Chemistry at Wayne State University. He currently has a group of 15 graduate students and postdocs and has four major federal grants to support his research. Research projects are underway in organometallic and coordination chemistry, chemical vapor deposition, and in the application of nanoparticles to thin film formation.

## 1990's

**Mari Baldwin** (B.S. '95)
Went to medical school at U of MN in '96 and graduated in 2000. I chose residency in Pediatrics and am currently in my 2nd year at UCLA. Enjoying LA sun and fun and maybe will come back to MN in the future after I am done with my training.

**Matthew Comstock** (B.S. '91)
Following my graduation from the U of MN in '91, I attended graduate school at the Univ. of Illinois at Urbana/Champaign. I conducted research under Prof. John R. Shapley, and investigated the chemistry of mono- and poly-nuclear iridium compounds containing indenyl ligands (indenyl - eta-5-C9H7; think cyclopentadienyl ligand with a fused benzene ring hanging off one side). After graduating with my Ph.D. in '96, my family and I moved to Cincinnati, Ohio, where I began work at The Shepherd Color Company as a research and development chemist. I continue to work with Shepherd today. In this position, I am able to focus on one of the best aspects of chemistry-the pretty colors! We make metal oxide pigments for such applications as residential vinyl siding, commercial metal building materials (coil), and automobile glass.
My wife Rita and I, and our three children, Gabriel, Lucas, and Emily are enjoying our life in Cincinnati.

**Paul Day** (Ph.D '91 Truhlar)
After finishing my degree, I did postdoctoral research with Mark Gordon from Sept. '91 to July '93, the first year at North Dakota State Univ. in frigid Fargo, ND, and the second year at Iowa State Univ. in balmy Ames, IA. One project on which I worked involved the development of a method for including solvent effects in ab initio calculations. This method, called the Effective Fragment Potential (EFP), is still part of my current research. I have been working at Wright-Patterson Air Force Base since August, '93. I still compete in triathlons each summer.

**Paul Deck** (Ph.D. '93 Gassman)
After receiving my Ph.D. I went to Northwestern Univ. for a postdoctoral appointment with Tobin Marks. While I was at Northwestern, I met Carla Slebodnick, who later ('98) became my wife. She was studying for her Ph.D. with Jim Ibers. In '95, I joined the faculty at Virginia Tech, and Carla went off to do a postdoc with Vince Pecoraro at the Univ. of Michigan before settling in as an instructor in our department with responsibility for X-ray crystallography. Earlier this year (2001) I was promoted with tenure. Carla and I enjoy teaching at Virginia Tech, and we love living in Blacksburg in the beautiful Blue Ridge Mountains of southwestern Virginia. Come visit us some time.

**Sarah Donahue** (B.S. '97)
Since graduation I have worked for Cargill Dow Polymers (located in Savage, MN) for one year and have subsequently started graduate school at the U of MN for Pharmacology. Grad school is OK, but I really miss all of my Chemistry buddies!

**Michael Dvorak** (Ph.D. '92 K.Leopold)
This fall I stared as an Asst. Prof. at St. Cloud State Univ. I am coming from seven years in industry at Dakota Technologies, Inc. in Fargo. I like being closer to the Twin Cities, but despite Fargo's reputation as cold and windy, I will truly miss it.

**Steve Gerst** (B.S. '93)
Finished my PhD in Chemistry from Univ of Washington in Seattle in March 2000. I currently live in Stillwater, MN, and work for 3M making Post-it(R) Notes.

**David J. Giesen** (Ph. D. '97 Truhlar)
Since leaving Minnesota in March of '97, I've been working for Eastman Kodak as a computational chemist. Since May of '97, I've been happily married to the woman formerly known as Kerrie Harms (now Kerrie Giesen), who herself is an alum of the U of M Chemistry stockroom. In March of 2001, we had our first child, Anna Giesen. Until the next, ahem, 'restructuring', I can be reached at david.giesen@kodak.com

**John Gore** (B.S. '97)
I'm a first year resident at UCLA. I'm in the urology program but I have to do a year and a half of general slavery, I mean surgery. Not much opportunity to enjoy LA, but I definitely do when I can. It makes you miss the midwest - lotsa glitz out here.

**Dave Gorman** (Ph.D. '90 Gassman)
I'm enjoying working at Dow Chemical Co. in Midland, MI doing a mix of process research and project management in the agricultural chemicals area. My wife Linda and I have two great kids, Becky (9) and Jonathan (2), and we both are very active in our church. Overall, living in Midland the past 11+ years has been great! If you're interested in more details, contact us at gormans@mindnet.org.

**David Gray** (B.S. '98)
I am still in San Diego in graduate school at Scripps beginning my fourth year in the lab of Professor K. C. Nicolaou where my research centers on the total synthesis of natural products and attendant methodology. I am truly enjoying my training and life here as are my wife Jessica, and daughter Dianne (2). We are expecting our second child in early May.

**Bob Hammer** (Ph.D. '90 Barany)
Bob is now an Associate Professor of Chemistry at Louisiana State Univ., where he has been since '92. His group's research involves the synthesis of peptide and nucleic acid analogs and their structural and biological evaluation. He lives with his wife Karen and two daughters, Jillian Peihua (6) and Katharine Limin (3), in Baton Rouge, LA not far from the beautiful LSU campus. Go Tigers, Go Gophers!!!

**Roger Harrison** (Postdoc '93-'95 Que)
I am still doing well. My family is fine. Chemistry is fine. I received tenure here at BYU last year.

**Robert Houser** (Ph.D. '96 Tolman)
Currently I am an assistant professor in the inorganic division of the Department of Chemistry and Biochemistry at the University of Oklahoma. On a personal note, my wife, Barb, and I now have three children, Emily (10), Suzanne (4) and Thomas (1).

**Wei-Ping Hu** (Ph.D. '95 Truhlar)
I am now an assistant professor in the department of chemistry of the National Chung Cheng University. The University is in the middle-south part of Taiwan and is close to the city of Chia-Yi.

**Angela James** (B.S. '97)
After 4 1/2 years of working in industry I will be "retiring" from chemistry and starting a career in dentistry. I am very excited about this new career path although I am very sad to be leaving my current job. Life has been good to me and am looking forward to what the future brings. Hope everyone from the class of '97 is doing well!

**Melody Jewell** (B.A. '97)
I am pursuing a Ph.D. in Paper Science and Engineering at the U of MN, College of Natural Resources. I hope to be finished this spring or summer.

**Linda D. Kennedy** (B.A. '96)
Since earning my Juris Doctor in 1998 from the Univ. of Minnesota, I have been a patent attorney for the intellectual property law firm of Brinks Hofer Gilson & Lione in Chicago, Illinois.

**Michael Konkel** (Ph.D. '93 Noland)
After graduating and leaving Wayland Noland's group in '93, I carried out a post-doctoral assignment with Dr. Robert Vince in the Medicinal Chemistry Department. My wife Lisa and I moved to Garfield NJ in '96 because I took on a post-doctoral assignment with Synaptic

Pharmaceutical Corporation (located in Paramus NJ), working on ligands for adrenergic receptors. In '98, I joined the chemistry staff at Synaptic Pharmaceutical Corporation at the level of Scientist II. In 2000, I was promoted to Senior Scientist, my current position. Currently, I lead the chemistry section of Synaptic's depression project - for which, shortly, we will have a compound going into the clinic.

**Bridget (Neutgens) MacBean** (B.S. '97)
I am currently working in pharmaceutical sales for Novartis in the transplant division. I've been with the company for 2 years.

**Shouchin (Zhou) Man** (Ph.D. '96 Gray)
My husband and I and our 3 children (age 9, 6, and 2.5) are living in Ann Arbor, MI. Both My husband and I are working for Pfizer Global R&D.

**Gina Mancini-Samuelson** (Ph.D. '96 Stankovich)
I am an assistant professor at the College of St. Catherine in St. Paul, Minnesota. I have been teaching in the Chemistry Department for 5 years. I teach the analytical courses and nursing general hemistry. My husband (David) and I built a home in Inver Grove Heights a couple of years ago and we still have many (too many) whippets.

**Vasilios S. Melissas** (Ph.D. '93 Truhlar)
Assistant Prof. of Chemistry, Section of Physical Chemistry, Department of Chemistry, University of Ioannina, GR-451 10 Ioannina, GREECE melissas@chem.auth.gr http://www.uoi.gr/schools/scmath/chemistry/chemistry.html

**Michelle Mullikin Chanak** (M.S. '92 Kass)
I am currently a stay-at-home mother living in Forest Lake, MN. My husband, Mike, and myself have a little boy named Zachary. He was born May 7, '99. I left my position as a Senior Chemist at H.B. Fuller Company in September '99. I found that I was a much happier mother being at home with Zach. It was a very difficult decision to leave my position at H.B. Fuller as I had been with them for 7 years and they treated me very well. However, looking back, it was the best decision that I have ever made. To save my sanity and get a little adult interaction, I work about 15 hours a week as a Pharmacy Technician at the Forest Lake Wal-Mart. I work evenings and weekends so that we don't need daycare. To meet other stay-at-home moms in the area, I joined the local MOMS Club. I am currently the Vice-President of our chapter. Mike and I have been married 6 years as of July 29th. He is a Chemical Engineer at H.B. Fuller. He didn't work there when we met. Actually, he has only been with H.B. Fuller for a week! He had previously been with a small engineering consulting firm in Blaine.

**William "Bill" Necoechaea** (Ph.D. '95 Truhlar)
After a brief stint in the private sector, I became a public high school science teacher in Bergen County, New Jersey, in January, '98. Things are going quite well, and I can't think of a way in which I'd rather be involved in science. I live in Essex county, very close to ex group-member Robert Topper, with whom I keep in touch.

**Karl Ochs II** (M.S. '91 Pignolet)
I'm currently living in St. Paul, MN working for DecisionOne as a Level 1 Help Desk Technician.

**Lane (Callahan) Patten** (B.S. '96)
After graduating from the Institute of Technology in '96, I went to medical school at the University of Minnesota. During my third year of medical school I got married to Justin Patten, another IT graduate (electrical engineering 1997). I graduated with an MD in 2000 and moved to Houston, Texas to start a residency program. I am currently a second year surgical resident at Baylor College of Medicine in Houston, Texas. I will be going into the lab in 2002 to work on surgical research in colon cancer diagnosis and treatment. My current goals are to finish my residency in surgery and apply for a fellowship in surgical oncology.

**Dacia Pickering** (Ph.D. '96 Rychnovsky)
Currently working for Bristol-Myers Squibb in Princeton NJ as a Research Investigator II dacia.pickering@bms.com

**Jay P. Powers** (Ph.D. '95 Rychnovsky)
'95-'96 Postdoc with Gilbert Stork, Columbia University '96-'98 Abbott Labs, Medicinal Chemistry '98-present Tularik Inc., South San Francisco, Medicinal Chemistry jpowers@tularik.com

**Owen Priest** (Ph.D. '96 Hoye)
After 2.5 years teaching organic chemistry at Hobart & William Smith Colleges I moved to Chicago, where for the past year and a half I have been on faculty at Northwestern University as the Director of Undergraduate Organic Laboratories.

**Scott Reeve** (Ph.D. '92 K.Leopold)
After graduating from the University of Minnesota, I was awarded an Office of Naval Research Postdoctoral Fellowship to study diamond thin film CVD chemistry at Michelson Laboratories in California. I began teaching at Arkansas State Univ. in August of '94. Since '96 I have worked to establish a Laser Spectroscopy Laboratory at ASU. Currently, we have two laser based spectrometers on-line and collecting data.

**Nes Rotstein** (Ph.D. '91 Lodge, Prager, Tirrell)
Upon completion of my Ph.D. in Polymer Physics I went to work for Monsanto where I had a number of different positions of increasing responsibility in R&D, Marketing and Sales through '98. In '99 I transferred to The Dow Chemical Company as part of a Marketing Alliance between my previous and present employers. I am currently a Business Development Manager in the Fiber Solutions Group of the Polyolefins and Elastomers Business at Dow. My wife Emily, a U of MN alumna, is a Business Development Manager at Dow's Advanced Electronics Materials Business. We are located in Midland, Michigan and have two beautiful children, Henning and Mathias, 5 and 3 years old respectively.

**Chris Rozanas** (Ph.D. '93 Gray) and **Clay Randall** (Ph.D. '93 Que)
We recently moved to New Jersey after living in the San Francisco Bay Area for eight years. Chris took a new position as an applications manager for proteomics at Amersham Biosciences, which required her to relocate to the headquarters in NJ. She has been at Amersham since '97. Clay transferred to one of the NJ offices of Siebel Systems, where he has been a senior technical writer since 2000. Our son Jonathan turned two in August 2001.

**Ravit Sarid** (B.S. '96)
After graduation I went to the University of North Texas, Denton TX and completed two MS degree; the first in Chemistry with Industrial Specialization and a minor in Computer Education and Cognitive Systems, December '98, and the second in Computer Science, May 2001. I currently work as a Software Engineer at CSA Unity Tooling, IBM Corporation, Rochester MN doing design and development of BiDi support in Unity Tooling.

**Jamie L. Schneider** (Ph.D. '99 Tolman)
I am in my second year of teaching at Winona State University as an Assistant Professor. I have been enjoying teaching a variety of introductory chemistry courses for science, nursing, and non-science majors. Besides these courses, I have also been teaching chemical information and chemical education courses. The education side of my position has been the most fun. Recently, I received a small grant to develop an outreach program. On the personal side, my husband Dave and I are enjoying life out in the country. We recently bought a house with a little bit of acreage along the bluffs of the Mississippi river. We enjoy taking walks through the woods with our puppy.

**Amy Seim** (B.S. '97)
I lived in Los Angeles for four years after graduating. I worked for a business to business marketing agency two years. Then decided marketing was not my thing, and took an interim vacation to Israel and Egypt last year. I am now in Minnesota applying to veterinary school at the U of M and the U of Pennsylvania, and trying to stay warm! I plan to practice equine medicine ASAP.

**David Severson** (B.S. '97)
I have been employed with H.B. Fuller Company since graduating. I started my career as a formulations chemist and have moved on to a marketing position. I currently reside in Edina and when I am not working I enjoy running around the lakes and playing golf.

**Andreea Simion** (B.S. '97)
My husband, Bogdan and I live with our two boys Alexander (4) and Anthony (1) in California now. I left the lab and currently work in Human Resources and am enrolled in a Certificate program in Human Resources Management at the University of California Berkeley, so I am going to school after work.

**Chris Stepaniak** (B.S. '97)
After graduation I went into the Initial Licensure teaching program at the U. After finishing that, I decided I didn't want to join the real world, so I went to graduate school. I'm now in my fourth year of grad school at U of MN, in the physics department, studying experimental heavy quark physics. Currently (and most likely until I finish my thesis) I'm at the Wilson Synchrotron Laboratory, on the Cornell University campus.
**Lynn Swanson Elverum** (B.S. '97)
I graduated in '97 and went on to graduate school to study public affairs of all things. My emphasis in public affairs was in technology, energy, and environmental policy. During graduate school I was a teaching assistant. While TAing, I decided that I loved to teach. So, I am now a high school chemistry teacher at Stillwater Area High School.
**Jon Thorson** (Ph.D. '93 Liu)
I recently moved my lab from the Memorial Sloan-Kettering Cancer Center (and Cornell University Medical School) in NYC to UW, Madison School of Pharmacy - now as an associate professor. The School of Pharmacy recently moved into a spectacular new facility (Rennebohm Hall) and we encourage students to take a closer look at the exciting research opportunities in our Pharmaceutical Sciences Graduate Program.
Danielle (my wife) and I had our first baby (Cristina) in August of 2000 and she is now almost 14 months old ... we are enjoying every minute of it! However, born a 'city girl', Cristina did have a tough time adjusting to the quieter nights in Madison (Cristina's bedroom in NYC was on the corner of York Ave and 62nd St - busy at all hours of the day and night).
Other than that, I am still a Vikings fan but am becoming a Badger fan (if that is legal.)
**Ted Ulrich** (B.S. '92)
Graduated in May 2001 from The Catholic University of America in Washington, D.C. Received Ph.D. in Religious Studies. Currently a Visiting Professor at the Univ. of St. Thomas in St. Paul. Hopes to find permanent employment soon!
**Randall Wanke** (Ph.D. '93 Carr)
I've been at Augustana College in Rock Island, IL, for 6 years. Last year I received tenure. I've switched my teaching duties from analytical chemistry and instrumental analysis to environmental chemistry and coordinating our general chemistry program. Most recently I've been doing some methods research involving chemometrics.
**Angela Wilson** (Ph.D. '95 Almlof)
After graduating I was a postdoc ('95-'97) at Pacific Northwest National Laboratory with Thom Dunning, Jr. where my projects included the development of ab initio correlation consistent basis sets. In Fall 2000, I became an Assistant Professor in the Dept. of Chemistry (doctoral-granting) at the University of North Texas, where I continue research in the development of computational chemistry methodology with my research group of seven. (UNT is the fourth largest university in Texas (28,000 students) located at the northern outskirts of Dallas).
**Nate Wittenberg** (B.S. '99)
Currently in my second year in grad school at Penn State doing analytical research with Prof. Andy Ewing.
**Steven Wonchoba** (Ph.D. '97 Truhlar)
On the professional front: I'm a Lead Systems Engineer at Qwest on Stinson Blvd in Minneapolis, doing coding and development, systems administration and support, and web tool / product development. Many of the same things that I did as a graduate student, only geared towards a different application. On the home / family front: We live in Blaine, MN now. We have 3 great kids -- a daughter in Kindergarten and twin 3 year-old boys. On the free-time front: I wrote, produced, and performed a full length original music CD called "The Words I Say Are True" early in 2001. It's available for play, download, or purchase at http://www.mp3.com/wonchoba . It has been favorably reviewed locally as well as internationally by a rock magazine in Holland.

## 2000's

**Megan (Wolgamot) Malvey** (M.S. '00 Arriaga)
After completing my degree at the U, I was married in May 2000 to Michael Malvey. We currently live in St. Paul and I am working in the Shared Technical Service Laboratory at Ecolab as a Senior Chemist.

# Four Ninety in the Forties and Friends (The Minnesota List)

As a labor of love Gerald (Gerry) Boyack (Ph.D. 1947, with Lee I. Smith), who is retired from the Upjohn Co. (now Pharmacia Corp.), has for many years put out at his own expense an annual newsletter with the above title. The most recent publication date is November 7, 2001. The list begins with a brief commentary, including news of the passing of friends and the availability of the list on E-mail (as well as hard copy). The list consists primarily of names and addresses (including E-mail addresses, when available) of former organic chemistry graduate students and postdoctoral fellows, and in some cases their widows, along with faculty with whom they would have been associated. At the end of the primary list are names of those who are known to be deceased, followed by a "Where Is?" list of those with whom Gerry has lost contact. The list extends beyond organic chemistry graduate students and includes people who were here during the '50's.

The name of the list arises because in the 1940's many of the organic graduate students from most research groups were housed in a single large, bull pen-type laboratory on the west side of the fourth floor of Smith Hall, Lab 490.

We owe a debt of gratitude to Gerry for his public service efforts over a number of years to help us keep informed and in touch with our friends and former colleagues. If you would like to be added to the list or contribute information, please contact:

Gerry Boyack
1518 Henderson Drive
Kalamazoo,MI 49006-4423
gboyack@compuserve.com

by Wayland E. Noland

# Chemistry Degrees Granted from July 1, 2000 to June 30, 2001

## Bachelor's Degrees and home town

+ Distinction, ++ High Distinction, * Summa Cum Laude

Kristina Marie Balck
Willmar, MN
Holly Jean Barron++
New Brighton, MN
Kimberly Lynn Bobbitt
Eau Claire, WI
Daniel John Breault+
Deer Park, WI
Alissa Rachel Bruss++
Wells, MN
Michelle Lynn Budinger
Ham Lake, MN
Mayerlin J. Challander
Cambridge, MN
Glenn Andrew Cheng
Hoffman Estates, IL
Manchi Cheung
Port Orange, FL
Joseph T. Delaney Jr.
Oakdale, MN
Aryel Roxanne Diker
Hopkins, MN
David Dreytser
Eagan, MN
Eric D. Esboldt
Cottage Grove, MN
David James Flannigan
Morris, MN
Adam T. Froemming++
Alexandria, MN
Jose Luis Gallardo
St. Paul , MN
Angie Theresa Gergen
Lakeville, MN
Greta Ann Gosewisch
Minneapolis, MN
Matthew C. Haugan
Anoka, MN
Eric W. Hemmesch
Sauk Rapids, MN
Andrew Holm
Brookings, SD
Shubhashish Howlader
Woodbury, MN
Michael James Johnson
Blaine, MN
Page Whitney Johnson
Mandan, ND
Jessica Elaine Jorvig
Belle Fourche,
Dennis J. Jung
Waukesha, WI
Andrew D. Kerslake
Brandon, SD
Karen Ann Kirby
Maryville, MO
Theresa Diane Kohls
Rochester, MN
Kevin James Kren
Watertown, WI
Jason B. Krogman
White Bear Lake, MN
Yakov Lapitsky+
St. Paul, MN
Jeremy Kevin Larsen
Eagan, MN
Michele Marie Lattrez
Coon Rapids, MN
Jennifer Phuong Le
Minneapolis, MN
Jimmy A. Liono
Surabaya, India
Soua Lor
Falcon Heights, MN
Nathan E. Ludtke+
Burlington, WI
Christine Mai
Chaska, MN
Dieudonne A. Mair
Gainsville, FL
Eric Joel Mayer
Hastings, MN
Sean P. McGeehan
Woodbury, MN
Nathan Rob McNallan
Rochester, MN
Melissa C. Meinke
Apple Valley, MN
Nicholas J. Midthune+
Moorehead, MN
Christopher D. Morgan
Le Sueur, MN
Duane Stuart Morrison
West St. Paul, MN
Karen Lynn Mulfort
Blaine, MN
Jason C. Myers+
Crystal Lake, IL
Nghia Trung Nguyen
Shakopee, MN
Marc C. Osborne+
North Oaks, MN
Hakan Ozturk
Minneapolis, MN
Angie Peng+
League City, TX
Troy A. Petersen++
Worthington, MN
Thu Quynh Phan
Minneapolis, MN
Bobby Gene Poe III
Willmar, MN
Indah Puspita
Balikpapan Kaltim,
India
Liam Justin Quinn
Marshfield, WI
Christopher Romanowski
Kenosha, WI
Tyler M. Ross
Duluth, MN
Patrick William Schildt
Eau Claire, WI
Sara Ellen Schurr
White Bear Lake, MN
Brent Craig Seager
Stoddard, WI
Ajit Bikram Shah
Minneapolis, MN
Douglas E. Smith++
Franklin, WI
Ryan Michael Sotak
Eagan, MN
Brian E. Stakston
Woodbury, MN
Kaine Swenson Stokes
Barron, WI
Loren J. Swenson*
Ely, MN
Audrey M. Thompson
Anoka, MN
Premwati Tomar
Falcon Heights, MN
Lucas J. Tomsich
North Oaks, MN
Julia L. Weinkauf
Rockford, MN
Nicholas James Wellman
Rapid City, SD
Ryan Wilson
Plymouth, MN
Georga Windsperger
Eau Claire, WI

## Degrees Granted Over The Past Five Years

| | Bachelor's | Master's | Ph.D. |
|---|---|---|---|
| 1996-1997 | 74 | 7 | 48 |
| 1997-1998 | 64 | 10 | 33 |
| 1998-1999 | 93 | 11 | 29 |
| 1999-2000 | 94 | 8 | 39 |
| 2000-2001 | 76 | 8 | 24 |

## Master's Degrees

| | | | |
|---|---|---|---|
| Chad E. Johnson | Lodge | *Probe Diffusion in Disordered Block Copolymer Melts* | |
| Yuelan Li | L. Miller | *Synthesis and Properties of Molecular Squares* | Grad. School, Univ. of Maryland, Comp.Sci.. |
| Brian E. Nelson | W. Miller | *Solvent Uptake in Crosslinked Submicron Latex Particles* | General Mills |
| Autumn E. Rich | McNeill | *Mechanistic Studies on the Dehalogenation of Chlorinated Ethylenes by Cobalamin Model Complexes* | UMN, Dept. of Civil Eng. |
| Brian Lee Stender | McNeill | *The Development of a Time-Resolved Singlet Oxygen Phosphorescence Detection System and The Quenching of Singlet Oxygen by Pharmaceuticals and Personal Care Products* | William Mitchell College of Law |
| Brian R. Strandberg | Ellis | | 3M |
| Fai Chu Wong | Musier-Forsyth | *Site-Directed Mutagenesis Studies and Cloning of Putative Amino Acid Editing Domain in Class II Prolyl-tRNA Sythetase* | UMN, Dept of Chem., Ph.D. Candidate |
| Luke R. Zehnder | Hsung | *Studies Directed Towards a Total Synthesis of Arisugacin* | Pfizer-Agoron |

## Ph.D. Degrees

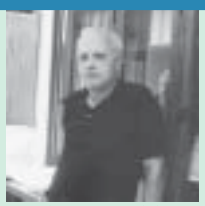
| | | | |
|---|---|---|---|
| Christopher F. Blanford | Stein | *Synthesis and Electron Microscopy of Inorganic and Hybrid Organic-Inorganic Mesoporous and Macroporous Materials* | Postdoctoral, Oxford |
| Brian W. Burke | Musier-Forsyth | *Species-Specific Differences in Recognition of tRNA (Pro) by Prolyl-tRNA Synthetases* | |
| Bin Chen | Siepmann | *Phase Equilibria of Hydrocarbons, Alcohols, Water, and Their Mixtures* | Postdoctoral, Univ. of Pennsylvannia |
| Kui Chen-Ho | Que | *Biomimetic Hydrocarbon Oxidations by Nonheme Iron Catalysts with Hydrogen Peroxide* | Postdoctoral, Northwestern Univ. |
| Arundhati Shripad Deo | Forsyth | *Synthetic Efforts Toward Eleutherobin* | Array Biopharma |
| Cheryl Marie El-Hilali | Gray | *Part I. Ultra-Sensitive Method for Carbohydrate Structural Analysis and Part II. Authentic Standards for the Reductive-Cleavage Method. The Positional Isomers of Partially Methylated and Acetylated or Benzoylated 1,4-Anhydro-d-galactitol and 1,5-Anhydro-d-ribitol* | |
| Denise Lynn Fiacco | K. Leopold | *Microwave Investigation of Partial and Hydrogen Bonded Molecular Complexes* | Achillion Pharmaceuticals |
| Valerie Ann Frydrychowski | Forsyth | *The Structural Basis of Phosphatase Inhibition by Okadaic Acid* | Postdoctoral, Brown University |
| Michael David Hack | Truhlar | *Quantum Photochemistry: Coupled Surfaces and Coupled Dynamics* | RW Johnson Pharmaceutical Research Institute |
| Joel M. Harris | O'Doherty | *Studies Toward the Synthesis of Alpha, Beta-Unsaturated Delta-Lactone Natural Products* | Postdoctoral, Emory U |
| Benjamin Ross Hazen | W. Miller | *Microscopic Phenomena in Crosslinked Polymeric Materials* | Ashland Chemical Co. |
| Brian A. Jazdzewski | Tolman | *Synthetic Modeling of Metal-Radical Arrays in Enzymes* | Dow Chemical Co. |
| Hao Kuang | Distefano | *Rational Design of Protein-Based Catalysts* | CA biotech company |
| Pinghua Liu | Liu | *Insights into the Enzymes in Fosfomycin Biosynthesis: Mechanistic Studies of HPP Epoxidase* | |
| Shawn D. McGrane | Lipsky | *Photoionization Processes in Saturated Hydrocarbon Solvents* | Los Alamos Labs |
| Jodi M. Milhaupt | Lodge | *Tracer Diffusion and Local Friction in Block Copolymer Melts* | Union Carbide |
| Erich J. Molitor | Liu | *Mechanistic Studies of Cyclopropane Fatty Acid Synthase* | Dow Chemical Co. |
| Bongjin Moon | Hoye | *I. Total Synthesis of (–)-Cylindrocyclophane A. II. Synthesis of Fluorescent Reactive Polymers and Their Applications to Detection of Inter-Macromolecular Reactions* | Postdoctoral, Univ. of California, Irvine |
| Jackson D. Pellett | Stankovich | *Probing the Molecular Mechanism for Thermodynamic Regulation in Short-and Medium-Chain Acyl-CoA Dehydrogenases* | Pfizer |
| Ronald H. Schmidt | Gladfelter | *Nanoscale Investigation of Viscoelasticity in Thin Polymer Films Using Environmental Scanning Probe Microscopy* | Postdoctoral, Univerity of Lund, Sweden |
| Aosheng Wang | Evans | *Multivariate Calibration of Retention in Reversed-Phase Liquid Chromatography* | |
| Hanfu Wang | Zhu | *Probing Metal/Organic Interfacial Electronic Structure by Two-Photon Photoemission* | Pacific NW Labs |
| Hongyu Zhao | Hoye | *Studies Toward a Total Synthesis of Callipeltoside A* | Abbott Research Labs. |
| Hui Zheng | Que | *Modeling Biomimetic Intermediates of Nonheme Iron Enzymes* | Postdoctoral, Hamline University |

# Professor Emeriti

read more details online at www.chem.umn.edu/alumni/newsletter.html

**J. Doyle Britton**
Living in Minneapolis, MN and active in science in the department.
britton@chem.umn.edu

**Bryce L. Crawford**
Living in St. Paul, MN. Inactive in science but enjoying the progress being made in the determination of molecular structure.



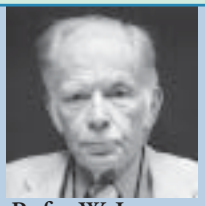
**John S. Dahler**
Living in Highland Park, MN and active in science in the department.
dahler@chem.umn.edu

**Raymond Dodson**
Living in Minneapolis, MN with his wife Liz. Inactive in science. Enjoying retirement.

**Stuart W. Fenton**
Living in North Oaks, MN. Makes it into the department when he and his wife aren't traveling or playing bridge.

**Essie Kariv-Miller**
Living in Tel Aviv, Isreal and enjoying her grandchildren.

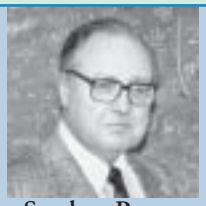
**Maurice Kreevoy**
Living downtown Minneapolis, MN and active in science in the department.
kreevoy@chem.umn.edu



**Rufus W. Lumry**
Living in Minneapolis, MN and active in science in the department.
lumry@chem.umn.edu

**Alden Mead**
Living in Savannah, GA. He and his wife, Karin are enjoying golf and tennis. Still active scientifically.
camead@compuserve.com

**Wilmer Miller**
Living in Finland, MN with Elli and doing a lot of handywork around the house.
wmiller@chem.umn.edu
wmiller@mr.net



**Stephen Prager**
Living in Arden Hills, MN with his wife Julie. Taking lots of walks and enjoying life.
psprager@cs.com

**Warren Reynolds**
Warren and Rose keep pleasantly busy with family, travel, bridge and gardening. Warren fills all available time with research into the solvation of alkali ions.

**Harold S. Swofford**
When he and his wife, Elna aren't traveling they reside in Northern Virginia. Consulting for Cellresin in St. Paul, MN
mn2va@att.net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