



University of Michigan

DEPARTMENT OF Chemistry

N E W S L E T T E R

Letter from the Chair

Greetings from Ann Arbor and the Department of Chemistry. After one full year as Department Chair, I have come to realize the full scope of this administrative challenge. It's been a very busy and exciting year as we forge ahead to meet the goals and implement the plans set out in our new 5-year plan.

One of the most ambitious parts of our plan is the recruitment of new faculty at the senior and junior levels. During the past year, Professor William Roush settled in the Department as the first Warner Lambert/Parke Davis Professor of Chemistry. Bill has assembled a super research group of graduate students and postdoctorals. We were successful this year in recruiting Professor Edwin Vedejs from the University of Wisconsin. Ed will join the faculty next January as the Moses Gomberg Professor of Chemistry. Some of his research group will start arriving at Michigan by August of 1998. Ed is a very distinguished organic chemist whose research spans both mechanistic and synthetic chemistry. He is a long time consultant for Pharmacia Upjohn Pharmaceutical Co. and is currently an Associate Editor of the *Journal of the American Chemical Society*. We were fortunate in recruiting Professor Carol Fierke from the Department of Biochemistry at the Duke Medical School. She will arrive at Michigan some time next summer. Carol is a biochemist with a strong physical organic background, and someone who will be a significant addition to our biochemistry undergraduate program and our graduate program in

chemical biology. In addition to these two outstanding senior hires, we welcome Dr. Larry Beck from Cal Tech as the Dow Corning Assistant Professor of analytical chemistry in September. Larry brings a broad spectrum of research expertise in solid state NMR, zeolites and nanostructures. Faculty recruiting will continue at a vigorous pace in the coming year with no less than four searches in the area of theoretical physical chemistry, organic and chemical biology and inorganic/materials chemistry. The College and the University both have been supportive and have facilitated the recruitment of outstanding faculty.

Unfortunately, we are losing one of our greatest supporters in the administration. In April, Edie Goldenberg announced her resignation as Dean of LS&A effective this August. In October, she will become Provost at the University of Texas, Austin. We all express our gratitude for her efforts to build a stronger Chemistry Department and wish her well in her new post. During the coming year, Professor Pat Gurin of the Psychology Department will serve as interim Dean while a national search is undertaken for a permanent Dean.

Other news in the Department includes the promotion of Dr. Richard Goldstein to Associate Professor with tenure. Richard is also an Associate Research Scientist in the Division of Biophysics. Professor James Penner-Hahn finishes his term as Associate Chair for Curriculum Development and Faculty Affairs. The Department is grateful for the outstanding job

that Jim has done. He will be replaced by Professor Masato Koreeda. Professor Mark Meyerhoff will continue as Associate Chair for Graduate Student Affairs for another year after which he will take a well deserved sabbatical leave.

We have had another excellent year for recruiting graduate students. In the fall, 45 new Ph.D. students will join the Department. This summer has also been a very productive one for undergraduate research participation with a total of 20 undergraduates doing research in various laboratories. We were fortunate to receive several significant gifts for undergraduate support this year which we have directed to summer fellowships including gifts from the Dreyfus Foundation, from PPG Co. and the Pfizer Pharmaceutical Co. Special gifts were also received from Helen Schaefer and from Marion Harris to supplement named endowments for undergraduate scholarship support. Lou Centofanti and Bob and Marj Parry added special gifts to the Robert W. Parry fund, and Jerry Robertson similarly strengthened the P. A. S. Smith fund. These two endowments and a new corporate gift from Pharmacia & Upjohn in Kalamazoo are directed to graduate support. Charles and Genevieve Walton also initiated an endowment fund for the support of materials research.

I would like to acknowledge and thank the alumni, alumnae and friends of the Department for their generous gifts during the past year. It is gratifying to see so many special gifts to named fellowships, lectures and to our Alumni/ae Fund. This

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latter resource has become an increasingly important component of our effort to provide the finest educational experience for our students. You will find that the back cover of the newsletter has the familiar gift reply form for the departmental annual appeal. This newsletter will be the only solicitation this year to all of you from the department for your continued support of our endeavors.

One of the high points of the academic year was the award of an honorary degree to alumnus, Professor Richard Smalley (BS '65) at the December, 1997 commencement. Professor Smalley is Professor of Chemistry and Director of the Center for Nanoscale Science and Technology at Rice University. He was a corecipient in 1996 of the Nobel Prize in Chemistry for the discovery of buckminsterfullerene.

At the next national meeting of the American Chemical Society in Boston, the Department will have a separate re-

ception and social hour on Monday evening, August 24, at 6 P.M. in the Brandeis Room of the Marriott, Copley Place. I invite those of you at the meeting to stop by and meet new and old friends.

In the fall, the College and Department will have a short program and reception to celebrate the naming of Bill Roush as the first Warner Lambert/Parke-Davis Professor of Chemistry. We are all indebted to Dr. Ronald Creswell, Chairman and Warner Lambert/Parke-Davis for sponsorship of the first endowed chair in the Department and in the College from a corporate source. This event will take place on October 29, 1998.

In closing, I extend my best wishes for a happy and prosperous year. I look forward to seeing some of you in Boston and to relating to all of you next year the progress in making the Chemistry Department at Michigan one of the best.

J. P. Marino

Symposia/ Seminars

October 28, 1997 was an extra special day for the Department. Professor Dimitri N. Coucouvanis, Professor of Chemistry, received the Margaret and Herman Sokol Faculty Award in the Sciences. Professor Coucouvanis gave a lecture on *Understanding the Structure-Function Relationship in Nitrogenase: A Major Challenge in Bio-inorganic Chemistry*. The event was held at the Rackham Amphitheater in the Rackham Graduate School with a reception and dinner following. The award was established at the Graduate School through the generosity of Mrs. Margaret Sokol.

The Department hosted, with pleasure, many visitors to special events this past year. The Moses Gomberg Lecture Se-

ries, coordinated and hosted by our assistant professors, and co-sponsored by the Dow Chemical Co. began in September with Prof. Jiri Jonas (U. of Illinois, Champaign-Urbana) discussing high-resolution NMR spectroscopy at high pressures. Prof. David Chandler (U. of California, Berkeley) presented a lecture series *Phase Equilibria, Frustration, and Self Assembly*. In December, Prof. Craig Townsend (Johns Hopkins U.) conducted a lecture series on *Understanding the Synthetic Roles of Multifunctional Proteins in the Formation of Polyketides and Beta-Lactam Antibiotics*. In April, the Department was very busy with visits from Prof. Alexander Pines (U. of California, Berkeley) presenting *NMR/MRI: All Lit Up*; Prof. Christopher Walsh (Harvard Medical School) speaking on *Post Translational Modifications*; Prof. Francis DiSalvo (Cornell U.) speaking on *Challenges and Opportunities in Solid State Chemistry*; and Prof. Graham Fleming (U. of California, Berkeley) giving a lecture series on *Ultrafast Nonlinear Spectroscopy and Photosynthetic Light Harvesting*.

In May, the Department was co-host to the Fourth Michigan Symposium on Con-

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temporary Challenges in Molecular Medicine sponsored by Parke-Davis Pharmaceutical Research. This year the focus of the symposium was on research at the chemistry-biology interface. Guest speakers included Prof. Stuart Schreiber (Harvard), Prof. Ralph Hirschmann (U. of Pennsylvania), Prof. Andrew Myers (Calif-

ornia Institute of Technology), and Prof. Paul Wender (Stanford U.).

The Bachmann Lecture was presented this year by Yoshito Kishi (Harvard) and the Willard Lecture speaker was Csaba G. Horvath (Chem. Eng., Yale).

All the special named seminars were attended by many throughout the year. It is

very exciting to bring new ideas and research developments to the Department through seminars, symposia and lectures. The Department is able to host these events through funds from endowments and generous corporate and individual gifts. These resources are essential to sustain a vital seminar program.

Spotlight Profiles on Faculty, Graduate Students, and Undergraduates

As a new addition to the newsletter, we will highlight one faculty member, one graduate student and one undergraduate student to let you know of their special accomplishments in the past year.

Faculty Member

Professor **William Roush** joined the faculty here at Michigan this past year. He jumped right into the fray of combining



research, mentoring graduate students, and serving on committees while integrating himself and his family into a new community.

During the past year, Professor Roush was appointed co-Chair of the Life Sci-

ence Commission by President Lee Bollinger. He is co-Chair with Professor Huda Akil of the Medical School. The charge of this committee is to assess the strengths and weaknesses in the area of Life Sciences at Michigan, both in research and in the education of students. It is also charged with formulating a plan as to how Michigan can become one of the leading academic centers for the study and application of the life sciences. Roush and his colleagues are hard at work developing strategies for achieving these goals.

Professor Roush's current research interests focus on the stereocontrolled synthesis of stereochemically complex natural products, and on the design and development of new reactions and synthetic methods. New ventures in the laboratory focus on the design and synthesis of oligosaccharides as site selective DNA binding agents, and inhibitors of cysteine proteases isolated from important human pathogens.

Professor Roush continues to serve on a number of boards including the editorial boards of *Organic Reactions*, *Encyclopedia of Reagents for Organic Synthesis*, *Organic Synthesis*; as well as serving on the Board of Directors for *Organic Reactions*. In 1998, he was the invited lecturer at the Heterocycles Gordon Conference in Rhode Island, the Natural Products Gordon Conference in New Hampshire, and the University of Colorado-Syntex/Roche Symposium on Organic Synthesis in Colorado. Later this year he will assume the role of Associate Editor of the "Journal of the American Chemical Society".

Additionally, Professor Roush served the Department on various committees including the Executive Committee and the UM/Parke-Davis Symposium Organizing Committee and was coordinator of the organic chemistry cluster. Currently, he is the research advisor to 18

graduate students and six postdocs. He taught his first course at Michigan, "Advanced Organic Chemistry," in the winter term. This fall term he will teach his first undergraduate course at Michigan, "Structure and Reactivity." All in all, it was a very busy and productive year for Professor Roush.

Graduate Student

Ms. **Susan Barker** is an up and coming researcher who has won numerous awards and honors. In the past year, Susan received the ACS Analytical Chemistry Fellowship for the 1998-99 academic year. In addition, she received the Horace H.



Rackham Graduate School Predoctoral Fellowship for the 1998-99 academic year. Susan also received a Sloan Summer Fellowship for 1998. She received the Kenan Award at a Union Carbide symposium in April 1998 (see Graduate Program News for write-up). She received the first prize for the best student presentation at the ANACHEM (Analytical Chemistry) Meeting, in Detroit in November of 1997.

She received much recognition for publishing work on the first optical biosensor for the biomedical detection of nitric oxide (has been found recently to play a highly important role in brain cell trans-

mission and is implicated in medications from the heart drug nitroglycerin to Viagra). Ms. Barker's research has resulted in many first author publications including "Fiber Optic Nitric Oxide Selective Biosensors", "Nitric and Chloride Selective Fluorescent Nan-Optodes and In Vitro Application to Rat Conception" in *Analytical Chemistry*. Susan, in her copious free time, enjoys oil painting and is active in church functions. She hopes to find a research position in a government or industrial lab. Her husband, Scott, is a graduate student in Electrical Engineering.

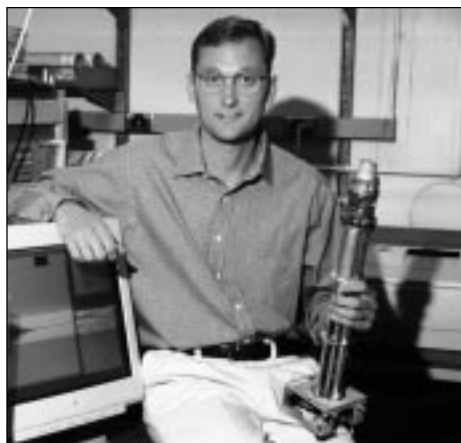
Undergraduate Student

Mr. **Andrew Haidle** (Chemistry, Coward) authored honors theses in both Cellular & Molecular Biology and Chemistry in preparation for the PhD program in organic chemistry at Harvard. In Prof. James Coward's lab he attempted the synthesis of B-fluoro L-threonine derivatives for incorporation into a peptide



which is to be used to investigate the mechanism of the enzyme oligosaccharyl transferase. Goldwater Scholar, Lubrizol Scholarship, National Starch Fellowship and American Institute of Chemists Chemistry Award are among his honors. In addition, he was awarded a Hertz Foundation Fellowship for five years of graduate study at Harvard (about twenty are given nationally).

New Faculty



Larry W. Beck, Assistant Professor Analytical NMR Spectroscopy of Materials; Zeolite Catalysis Ph.D., Texas A&M University

Fundamentally, our objective is to understand the relationship between chemical structure and the physical properties of bulk materials through spectroscopic measurements. Our specific focus is to investigate the complex physical properties that affect heterogeneous catalysis by applying solid-state NMR. Inorganic oxide catalysts, in particular zeolites, are our primary interest. Zeolites are microporous, crystalline solids used extensively by the chemical industry as catalysts and adsorbents.

The problems that we study are directly relevant to the chemical industry. Chemical systems include acid-catalyzed oligomerization, bimolecular addition reactions and transition-metal catalyzed partial-oxidation of hydrocarbons. While many successful processes employ zeolite catalysts, very little is known about how these catalysts work. Our research strives to understand how catalyst structure relates to performance. Once the catalytic mechanism is understood then the catalytic materials can be redesigned for optimum performance.

We are developing and applying sophisticated NMR spectroscopic techniques in order to investigate heterogeneous catalysis. Importantly, the catalysts are investigated under reaction conditions using *in situ*, high-resolution NMR methods. This enables us to learn how the catalytic process changes the material's local structure and in turn how

the structure affects catalytic performance. NMR is the best technique to monitor many dynamic surface processes occurring within the NMR time-window, msec to sec.

The problem-solving approach of this research is also multi-disciplinary. Our research involves technically demanding NMR measurements and requires some instrument design and modification. Additionally, the pulsed-NMR experiments are constantly evolving in order to optimize the measurement. Our efforts to understand surface-mediated organic transformations has led us into cutting-edge physical-organic chemistry. These surface reactions are different from gas or solution-phase reactions and often the empirical rules of traditional chemistry do not apply. Materials synthesis is also an integral part of our research, since we design and synthesize the catalyst for each project. This enables the greatest degree of flexibility and control over the structural properties we want to study.



Edwin Vedejs, Moses Gomberg Professor of Chemistry, Organic Chemistry Ph.D., University of Wisconsin

Our work is designed to develop an understanding of conceptual, stereochemical, mechanistic, and preparative aspects of organic synthesis. All Ph.D. students in the group become involved in the

construction of complex target structures to learn the strategies and logistics of multistep synthesis. The targets can be natural products derived from nitrogen-containing heterocycles, but they can also be complex unnatural heteroelement (boron, nitrogen, phosphorus, etc.) containing molecules that have been designed to serve as catalysts for enantioselective reactions. We use total synthesis as a challenging testing ground for the fundamental issues that are under study in our group, and as an extraordinary tool for training that teaches logical analysis and practical mechanistic thinking as well as preparative chemistry. Targets are care-

fully chosen to combine the investigation of several fundamental questions in connection with a specific structural family and to provide a diverse experience for group members. In some cases, our projects encounter biologically interesting activity and collaborative screening efforts, but our principal focus is on the chemistry and on fundamental questions. The ideal synthesis project in our group targets a substance that is needed for a specific purpose, and addresses concepts that have lasting value beyond the specific family of targeted structures.

Recent studies have focused on the investigation of reagents and catalysts

based on heteroelements and phase isolation technology, the exploration of stereogenic heteroatoms as sites where stereochemical information may be temporarily stored, and on a variety of methods for enantioselective synthesis (anion protonation; acylation and alkylation of chiral or prochiral nucleophiles; parallel kinetic resolution; configuration control using crystallization methods). In the area of synthetic methodology, we have been especially interested in the activation of sensitive heterocycles for bond formation. Advances on this topic are currently featured in our total synthesis projects.

Faculty News

Mark Banaszak Holl received two new grants this year. NSF sponsored a project on the structure and reactivity of silicon/silicon oxide interfaces. Dow-Corning will provide funding for the study of the structure and reactivity of interlayer dielectrics derived from T8-resin or flowable oxide. He also received an IBM Research Partnership Award and a 3M Nontenured Faculty Award.

Professor Emeritus **L. S. Bartell** gave a lecture on nucleation at the Institute of Industrial Research in Wellington, New Zealand and in March gave an invited talk at a symposium on nucleation at the March meeting of the American Physical Society in Los Angeles. In June he lectured, again on nucleation, at the International Symposium on Nucleation in State College, PA. He went to Russia to speak at an International Workshop on nucleation and first-order phase transitions in St. Petersburg. In August he will give an invited lecture on supercooled water at the Gordon Research Conference on Water in the Holderness Academy in New Hampshire.

Brian Coppola, along with **Mark Meyerhoff**, will serve as co-PI of a Department of Education GAANN grant focusing on the creation of an infrastruc-

ture for developing teaching scholarship. The project is part of a larger program called "Chemical Sciences at the Interface of Education". Brian was named as Pew Scholar in the first round of a new program created by the Carnegie Foundation for Teaching and Learning, located at the Stanford Research Institute. He will be involved in shaping the new program and planning for establishing "Teaching Academies" at the home campuses.

Dimitri Coucouvanis received an NIH grant to continue research on "Iron and Molybdenum Complexes: Enzyme Active Sites". He received the Margaret and Herman Sokol Faculty Award in the Sciences during a lecture held last Fall. He attended the nitrogenase Gordon Conference and the International Conference on Coordination Chemistry in Florence, Italy where he presented invited lectures.

James Coward was appointed Director of the Medicinal Chemistry Interdisciplinary program in January of this year by the Rackham Graduate School.

M. David Curtis spent three weeks in Japan on a lecture tour sponsored by the Japan Society for the Promotion of Science. He also presented papers at the North American Chemical Congress, Cancun, Mexico, and at the Dallas ACS meeting.

As General Chair of the 16th Biennial Conference on Chemical Education, Professor **Seyhan N. Ege** continues to work on plans for the meeting to be held at the University of Michigan from July 30 to August 3, 2000. As her first official duty in this role, she, along with **Brian Coppola**, will be representing the 16th BCCE at the 15th BCCE taking place at the University of Waterloo in Ontario in August 1998. Information about the 16th BCCE may be found on the web at <http://www.umich.edu/~bccce>. The fourth edition of Professor Ege's textbook "Organic Chemistry. Structure and Reactivity" will be published in October 1998.

Christine Evans' lab has made significant research progress in two primary areas: pressure studies and interfacial chemistry. A grant from the National Science Foundation was recently received to support this work. Several prestigious awards were received by researchers in her group: Amethyst Cook-Smith, undergraduate, Regional ACS Analytical Chemistry Award; Mark Mowery, fourth-year graduate student, Regional ACS Outstanding Research and Teaching Award; Moira Ringo, fourth-year graduate student, National ACS Full-Year Fellowship sponsored by the Procter & Gamble Co.

John Gland received a DOE grant for a collaborative program with Ford Science Laboratories to study propylene and propane oxidation over platinum surfaces using soft X-ray methods. These fundamental studies are related to the development of calorimetric hydrocarbon sensors which are being considered for use in automotive exhaust applications.

Congratulations to **Richard Goldstein** who was promoted to Associate Professor of Chemistry and Associate Research Scientist in Biophysics this year. Richard recently received the Class of 1923 Memorial Teaching Award for undergraduate education. He also received a Rosenbaum Fellowship this year to study at the Newton Institute at Cambridge University during the Fall semester.

Nancy Konigsberg Kerner received a Faculty Development Fund Grant at the University for a project entitled "Instructional Strategies for Process Learning." She continues curriculum development of collaborative laboratories in general chemistry with a grant from NSF. She was recently appointed to the Biochemistry Task Force with the ACS Division of Chemical Education and is working on development of collaborative inquiry biochemistry experiments.

Raoul Kopelman, the Kasimir Fajans Collegiate Professor of Chemistry, Physics and Applied Physics, presented the world's smallest sensors (10 nm) and their intracellular applications at the plenary session of the 1998 International Biosensors Conference in Berlin. Invited talks were also given by him and his group members at European, Japanese and North American conferences, concerning bionanosensors as well as excitations and non-classical kinetics in supermolecules, nanostructures and microdomains. He received new grants from DARPA, NIH and MicroSense International LTD.

Robert Kuczkowski spent his sabbatical year reading, writing and doing experiments. He presented a talk "Modeling of Sulfur Dioxide Complexes" at the 17th Austin Symposium on Molecular Structure" in March summarizing the work of

his students over the last ten years. Bob is a member of the Executive Committee of this biennial meeting which brings together experimentalists and theorists from a variety of areas. He is presently helping to edit a special Festschrift issue of the Journal of Molecular Structure celebrating Prof. Emeritus Lawrence Bartell's 75th birthday. The issue should appear in spring 1999.

Professor **Lawrence Lohr** and Professor Emeritus **Christer Nordman**, each regaled in white tie and tails, attended (in April) the 160th Anniversary meeting in Helsinki, Finland, of the Finnish Society of Sciences and Letters (Finska Vetenskap Societeten). Both are Foreign Members of this Society.

David Lubman received a grant from NIH for his research on "Methods Development for Microsequencing in an Ion Trap TOF Device". He also received grants from the Army for "Methods of Screening Bacteria by MALDI-MS."

Neil Marsh received funding from NIH for his research on "How do enzymes generate and control free radicals?" He was also nominated by the University for a Packard Fellowship.

Mark Meyerhoff received two NIH grants to continue his various research projects including polymer membrane ion/polyion sensors, and one DOE grant (co-PI with **Brian Coppola**) to develop a program within the department/university that will train future chemistry faculty.

Michael Morris received funding from PHS and Unilever Research to continue his research efforts on Electro-Optic techniques in capillary gel electrophoresis, CE/Raman Spectroscopy of ATP, and SERS Microprobe for spatial localization of skin care product delivery. He completed a productive sabbatical in the fall term.

Will Pearson spent the academic year as a Visiting Scientist at Parke-Davis Pharmaceutical Research while on sabbatical.

Vincent Pecoraro was on sabbatical this past year at Merck Pharmaceuticals and

in Europe. He received the Alexander von Humboldt Stiftung Award this year.

A. Ramamoorthy received funding (co-PI with **Erik Zuiderweg**) from NIH for work in high field NMR spectroscopy. He also received a PRF (ACS) grant.

William Roush was appointed co-chair of the University of Michigan Life Sciences Commission. In addition to his ongoing research projects supported by NIH, he received funding for his research from Eli Lilly & Co. this past year.

Richard Sacks continued progress on his research in high-speed separations. Funding from Sandia National Labs and CDC supported this research.

Roseanne Sension, with co-PIs, received funding from NSF for development of an advanced high field science laser facility at the Center for Ultrafast Optical Science. Additionally, she received NSF funding for research in "Ultrafast Studies of Electron Transfer in Photosystem II" and NIH funding for "Time-Resolved Studies of B₁₂ Enzymes and Coenzymes."

Leroy Townsend was recently appointed to the American Chemical Society Committee on Chemistry and Public Affairs. He served as the Academic Councilor of the Medicinal Chemistry Division at the ACS national meeting in Dallas. In September of 1998, he will present the first plenary lecture at the *XIIIth International Round Table* in Montpellier France.

Professor Emeritus **Edgar Westrum, Jr.** presented a series of presentations on the thermodynamics in Europe, Asian and around the country. He completed a book on the thermodynamics of ternary oxides.

Charles Yocum was named to a Collegiate Professorship, the Alfred S. Sussman Collegiate Professor of Biology. He was elected Councilor of Division 3 (Photosynthesis) of the American Society for Photobiology, and continues to serve as a member of the Molecular Biochemistry Advisory panel at National Science Foundation. He completed a nine year tour of duty on the editorial board of *Biochimica et Biophysica Acta* and six years as a senior associate editor of *Plant Physiology*.

Graduate Program News

45 Entering Graduate Students for Fall, 1998

The department is pleased to announce that it has had another successful recruiting season. The Department hosted three recruiting weekends that brought 76 prospective students to Ann Arbor, with another 21 visiting independently. Forty-five students will be joining the Ph.D. program this Fall. The new class members come to us from both the large research universities as well as the smaller, liberal arts colleges. Welcome to the incoming class!

Departmental Awards Ceremony and Ice Cream Social

Summer 1998 began May 29th in the lower atrium of the Chemistry building with the Department's annual ice cream social and graduate awards ceremony. Nine students were honored for their outstanding achievements in the department for the academic year 1997-98. For each award category students were nominated by faculty and selected by the Awards Committee.

Outstanding Graduate Student Instructor Award (GSI)

The Department of Chemistry provides awards annually to outstanding graduate student instructors. Winners are chosen for their contributions to innovation in the lab or classroom, and by teaching evaluations and written recommendation of professors. The 1997-98 Outstanding Graduate Student Instructor Award winners were: Matthew Brukwicki, Allwyn Cole and Leah Meeuwenberg.

Outstanding Graduate Student Research Award

This award is given to those students that demonstrate superior research skills and recognizes the creativity of the students and the uniqueness of their topic. Winners of this award have several publications and have presented at major national conferences. The 1997-98 Outstanding Research Award winners were: Xinggao Fang (Ashe) and Jeffrey Schwinefus (Morris).

Mr. Fang's research focused on the preparation of new homogeneous catalysts for Ziegler-Natta polymerization of olefins. Mr. Fang has co-authored over 18 ar-

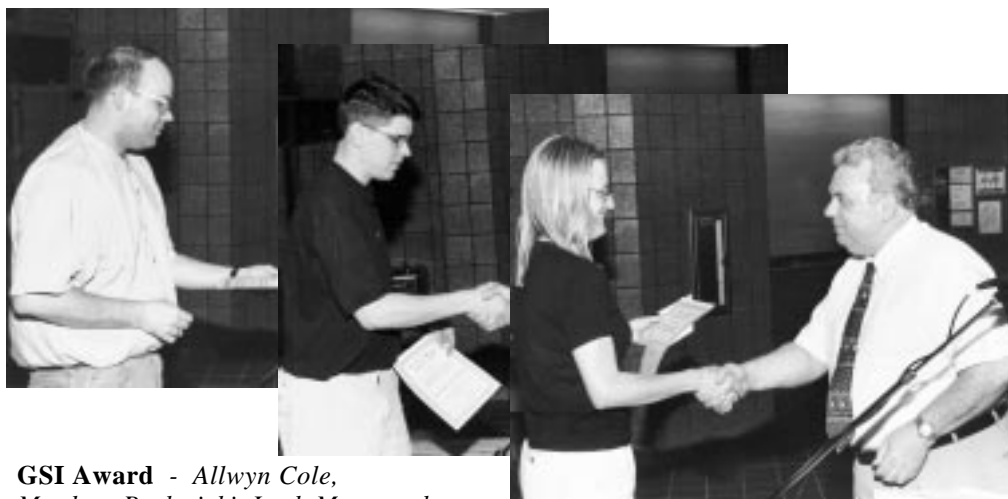
ticles and presented most recently at the Dallas ACS National Meeting.

Mr. Schwinefus' research focused on elucidation of electrophoretic migration



Research Award - Xinggao Fang, Jeffrey Schwinefus, Prof. Mark Meyerhoff

mechanisms of linear and supercoiled nucleic acids. He used video microscopy and electrophoresis. Mr. Schwinefus has five co-authored publications and presented most recently at the Pittsburgh Conference in New Orleans.



GSI Award - Allwyn Cole, Matthew Brukwicki, Leah Meeuwenberg, Prof. Joseph Marino

American Chemical Society Outstanding Graduate Student Award for Research and Teaching

This award is given by the Huron Valley Section of the American Chemical Society. It is intended to recognize achievement in teaching and research by a gradu-



ACS Award - Mark Mowery,
Prof. Joseph Marino

ate student. The 1997-98 award winner was Mark Mowery (C. Evans). Mr. Mowery's research focused on the understanding of the fundamental events in analytical measurements and biological processes that occur at the interfaces of organic thin films. He has co-authored over seven articles. He will be presenting his work at three separate events this summer (two at the ACS conference in Boston) and fall (American Vacuum Society International Conference). Mr. Mowery was a graduate student instructor for senior level instrumental analysis and physical chemistry laboratory courses.

Milton Tamres Outstanding Teaching Award

This award was established in the name of Emeritus Professor Milton Tamres. This award recognizes outstanding cumulative teaching service.

The 1997-98 winner was Joseph Gardner (Marino). Mr. Gardner motivates students to learn. He values students and they value the time he gives them in discussion. He has shown leadership in assisting in the GSI training sessions. He has been ranked as one of the top three chemistry GSIs in the department over

the last ten years. Mr. Gardner has performed as a true colleague in the instructional program.



Joseph Gardner, Prof. Joseph Marino, Prof. Milton Tamres

Leadership Award

The leadership award is given to a graduate student who has shown the skills of a leader of many. The person takes an active role in the Department giving extra time assisting with graduate recruitments, working with faculty and staff to provide a better environment for graduate students, and also serves as morale and welfare support resource for the graduate students. The 1997-98 winner was Steven



Outstanding Leadership - Steven Clarke, Prof. Mark Meyerhoff

Clarke. Mr. Clarke served the year as president of the Graduate Student Committee. He oversaw the organization of

many social events for graduate students. He interacted with faculty at Executive Committee meetings, and was the pivotal person in maintaining a consistent link between the "red-tape" and graduate students.

In addition to the Departmental awards, we wish to recognize three additional awards given to our students this year.

Hoffmann-La Roche Award (Spring 1998)

This is an external award given by the Hoffmann-La Roche Company for Excellence in Organic Chemistry.



Hoffmann LaRoche - Dr. Dennis Loh (Hoffmann-LaRoche, Inc.), Joseph Gardner

The Department chose one student to be nominated for this award. The 1997-98 winner, Joseph Gardner (Marino), was one of seven graduate students in chemistry from top-ranking universities selected to receive this honor. Mr. Gardner's research focused on the synthesis and dianion reactivity of optically pure *B*-amino sulfoxides. This has practical applications, such as providing a quick route to protected *B*-amino acids. This methodology is being used to work towards the total synthesis of the antibiotic Negamycin.

ACS Analytical Division Fellowship

This year, we were fortunate to have two 1998-99 ACS Analytical Division Full Year Fellowship winners. Ms. **Susan**



1998-99 ACS Fellows - Susan Barker, Moira Ringo

Barker (Kopelman) won this award and is sponsored by Merck and Co., Inc. (see write-up on page 3 about Ms. Barker.) Ms. **Moira Ringo** (C. Evans) was the second recipient of this award. Her sponsor is Procter & Gamble Co.

Ms. Ringo's research focused on the effect of pressure on equilibria in liquid chromatography and capillary electrophoresis, with an emphasis on fundamental elucidation of chiral interactions. Ms. Ringo is the primary author of five publications currently in print and two that are in review, one of which was recently featured on the cover of Analytical Chemistry.

Union Carbide Corporation Kenan Award

This award is given for outstanding graduate students working in the field of measurement science.



Dr. Katherine Grabar, (Symposium Organizer) Susan Ritenour Barker, Dr. Eugene Boros (Union Carbide)

Susan L. Ritenour Barker was presented with this award at the 8th Annual Kenan Award Symposium in April. She was nominated by the Department. Ms. Barker was chosen along with nine other graduate students to receive this award. Ms. Barker's research involves the development of optical sensors for anions and a selective nitric oxide biosensor capable of dynamic intra- or intercellular measurements on a biological time scale.

Fellowships

In addition to the awards, the Department provides fellowships to outstanding students. Fellowships given during the past year by the Department, the College and the Rackham Graduate School include

Chemical Biology Interdisciplinary (CBI) Training Grant Fellowships: Sanmitra Deo, Craig McClure, Jessica Pankuch

Dow Britton Fellowship: Mark Biscotto
Graduate Assistance in the Area of National Need (GAANN) Fellowships: Rebecca Appleman, Murphy Brasuel, Cory Emal, Jennifer Holt, Maureen Kachman, Andrea Kastrup, Roxanne Kunz, Carrie Leonard, Jerilyn (Pezzuti) Timlin, Rose Sattler



Regents' Fellows - Morris Slutsky, Neil Yakelis, Steven Clark



1998-99 Rackham Predoctoral Fellows - Susan Barker, Jeff Schwinefus

Rackham Predoctoral Fellowships: Susan Barker, Jeffrey Schwinefus

Rackham Merit Fellowships: Millicent Weldon, Tania Pearson

Regents' Fellowships: Jeffrey Bednarski, Neal Blatt, Roger Clark, Steven Clarke, Matthew Hartman, Morris Slutsky, Neal Yakelis

Schalon Fellowships: Karla Miller

Sloan Fellowships: Wendy Blanda, Joan Esson, Luyi Guo, Peiqing Huang, Maricel Kann, Karla Miller, Katrina Peariso

Smeaton Fellowship: Jin-Hai Yang

Sokol Fellowships: Theresa Ambrose and Keenan Dungey

These fellowships recognize the academic and research excellence of graduate students.



GAANN Fellows - Murphy Brasuel, Jerilyn Timlin, Rose Sattler



CBI Fellows - Jessica Pankuch, Craig McClure



Sloan Fellows - Karla Miller and Maricel Kann

Doctoral Degrees

August, December, 1997 and May, 1998

Shawn Abernathy (Sharp)

Effects of Zero-Field Splitting Interactions on NMR Relaxation in Paramagnetic Solutions. Dr. Abernathy is a post-doctoral researcher at Howard University where he is working with magnetic resonance imaging (MRI).

Theresa Ambrose (Meyerhoff)

Investigations of Photocrosslinked Decyl Methacrylate as a Membrane Matrix for Electrochemical and Optical Ion and Polyion Sensors. Dr. Ambrose has joined the Clinical Chemistry Postdoctoral Training program at the Washington University School of Medicine.

Teresa Cain (Lubman)

Application of Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry to the Study of Bacterial Biomolecules. Dr. Cain is now employed at Magellan Labs in North Carolina.

Wonyoung Choe (Lee)

Structural Studies on Silver(I) Coordination Networks of Low-Symmetry Ligands and on Dysprosium Copper Tellurides.

Kenneth Christensen (Morris)

Hyperspectral and Filter-Based Raman Microscopy and Imaging: Design of Practical Imaging System. Dr. Christensen is a post-doctoral researcher at the University of Michigan Medical School.

Ted Clark (Evans B. J.)

Local Crystal/Chemical Structures at Iron Sites in Amorphous, Magnetic and Nanocrystalline Materials. Dr. Clark recently completed a position as a visiting assistant professor at Denison University and will begin a post-doctoral research position at Ohio State University.

Kelly Daly (Penner-Hahn)

Determination of Electronic Structure and Dynamics for Transition Metal Systems Using X-Ray Spectroscopy. Dr. Daly is employed as a Research Scientist at Energy Conversion Devices in Troy, MI.

Cherie Dotson (Evans B. J.)

Order-Disorder Phenomena in Naturally Occuring Metal Oxides. Dr. Dotson is taking time to start her family.

Keenan Dungey (Curtis)

Attacking the Hydrodesulfurization (HDE) Pie with a Three Prong Fork: Modeling HDS by Solid State Synthesis, Homogeneous Desulfurization and Heterogeneous Probe Reactions. Dr. Dungey is a NSF funded post-doctoral researcher at Furman University.

Sridhar Govindarajan (Goldstein)

Protein Structure and Folding: An Evolutionary Perspective. Dr. Govindarajan is a post-doctoral researcher at the University of Florida.

Brent Hamstra (Pecoraro)

Vanadium-aminocarboxylate complexes: Models for the Roles of Vanadium in Biological Systems. Dr. Hamstra is a post-doctoral researcher at the Department of Chemistry and Biochemistry at the University of Notre Dame.

Ling He (Lubman)

Theoretical and Experimental Improvements for Using an Ion Trap/Reflectron Time-of-Flight Mass Spectrometer to Detect Biological Molecules. Dr. He is a Research Scientist at Scherring-Plough Pharmaceuticals.

Sean Kane (Gland)

The Role of Hydrogen and Surface Structure in the Reactions of Model Thiols on Nickel Surfaces. Dr. Kane will be starting a 1-3 year term as a Caltech post-doctoral Scholar (supported by NASA's Upper Atmosphere Research Program) at the Jet Propulsion Laboratory in Pasadena, California this August. He will be investigating heterogeneous chemistry in stratospheric ozone depletion.

Xuhui Li (Lubman)

On-Line Capillary Separations / Mass Spectrometry for Biomolecular Characterization with an Ion Trap / Reflectron Time-Of-Flight Mass Spectrometer. Dr. Li is a Research Scientist at Bristol-Myers Pharmaceuticals in Connecticut.

Brian Lian (Pearson)

The Total Synthesis of (+)-Cocciine via an Intramolecular 2-Azaallyl Anion Cycloaddition. Dr. Lian is employed at Microcide Pharmaceuticals.

Xiaoli Liang (Lubman)

Analysis of Complex Biological Mixtures by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry. Dr. Liang is a postdoctoral research associate at Argonne National Labs.

Hui Liu (Rasmussen)

Syntheses and Characterizations of Derivatives and Polymers containing Cyanoimidazoles. Dr. Liu accepted a position with Solutia Inc., a spinoff of Monsanto.

Weiman Liu (Townsend)

Direct and Efficient Convergent Synthetic Routes to Pyrazine C-Nucleosides. Dr. Liu is a Senior Scientist at Shionogi BioResearch Corporation in Lexington, Massachusetts.

Steven Malinak (Coucovanis)

The Design and Synthesis of Potential Catalysts for the Reduction of Small Molecules, with Specific Emphasis on Modeling the Function of Nitrogenase. Dr. Malinak is a postdoctoral researcher at Michigan.

Michael McClure (Marino)

Stereocontrolled Synthesis of (-)-Macrolactin A. Dr. McClure is a post-doctoral researcher at Emory University.

Robert Reynolds (Coucovanis)

The Synthesis and Characterization of Polynuclear Carboxylate and Polynuclear Carboxylate/Catecholate Complexes.

Jennifer Sowinski (Toogood)

Total Synthesis of a Keramamide: Structural Evaluation of Keramamide J. Dr. Sowinski is now a medicinal chemist at G.D. Searle in Chicago, Illinois.

Erland Stevens (Pearson)

Preparation and Reaction of Nitrogen-Substituted Carbanions: (1) Heteroatom-Substituted 2-Azaallyl Anions and (2) Branched -Amino Anions. Mr. Stevens has accepted an assistant professorship at Davidson College in North Carolina.

Tong Xu (Coward)

Design, Synthesis, and Evaluation of Unnatural Amino Acid-Containing Peptides as Mechanistic Probes and Inhibitors of Oligosaccharyltransferase. Dr. Xu is a research chemist at La Jolla Pharmaceuticals located in La Jolla, California.

Undergraduate Program News

ACS Student Affiliates

The American Chemical Society Student Affiliates Chapter have received a University of Michigan Leadership Award for being an Outstanding Student Organization. Out of over 60 nominations, they were one of only five student organizations to receive this award, and the only one to be associated with an academic department. The award recognizes their efforts to revitalize their Chapter over the past year. They have been particularly effective in their efforts to bring chemistry into the classroom with their outreach program to local schools.

Growing from almost zero to more than sixty active members in less than a year the University of Michigan American Chemical Society Student Affiliate Chapter is a success story about revitalizing a struggling chapter. Innovative officer positions, increased delegation of authority, and the courage to try new ideas created a special chemistry in the group. In order to encourage all members to be creative and reach their full potential, the officers stressed, "Dream an outstanding activity, and everyone will make it happen." This organization is the result of dreams. The co-chairs of the Chapter this past year were Jonathan Irish and Susan Blum.

Undergraduate Horizons

Our Chemistry and Biochemistry graduates pursue a number of different career paths: graduate school, MD/PhD programs, industrial internships, medicine, public health or employment in industry are a few examples. Some of this year's graduates are highlighted below. For 1997-98 chemistry degrees totaled thirty-two, biochemistry had thirty-seven, with seven students concentrating in both programs. This is just a small sample of our outstanding students.

Karl Granskog (Chemistry, Townsend) found a niche in Professor

Leroy Townsend's group doing research on triazines and their attachment to sugar bases. He worked there for two years gaining valuable experience which helped him obtain a position at Pfizer, Inc., in research and development.

Sajida Jackson (Biochemistry & Chemistry, Cordes) will work towards a master's degree in epidemiology at the University of Michigan School of Public Health. Her research in Prof. Eugene Cordes' lab was to design highly potent and specific inhibitors of purine nucleoside phosphorylase.

Rahul Kohli (Biochemistry, Massey) will pursue medicine and research through the MD/PhD program at Harvard. Rahul has been recognized nationally as a Goldwater scholar, and the department awarded him a National Starch Scholarship and the American Institute of Chemists Biochemistry Award.

Jason Pontrello (Chemistry, Penner-Hahn) has pursued an industrial internship at Warner Lambert before attending graduate school next year. His chemistry honors thesis, under Prof. James Penner-Hahn, is entitled "Investigations of the Manganese Catalase Enzyme from *Lactobacillus Plantarum*."

Sarah Reybuck (Chemistry, Rasmussen) completed her degree in seven semesters, allowing her time to pursue research in Germany for eight months before attending Stanford this fall. She wrote an honors thesis entitled "Synthesis and Characterization Mono-anil Derivatives of Diaminomaleonitrile and Vinyllic Monomers and Polymers from 4,5-dicyano-2-vinylimidazoles." She received a freshman Sokol fellowship, a Schaeffer scholarship, and the ACS Huron Valley Section Outstanding Leadership Award.

Undergraduate Awards

In April, the Department hosted the annual Undergraduate Awards. Invited speaker, Professor Michael Martin, Director of the Honors Program, kept the guests amused with "lessons learned" from his biology school days.



Summer Research Fellowships (front left to right) Aaron Daniel, Rebecca Ihrie, Sara Roberts, Jesse Kuiper, (back left to right) Lisa Viculis, David White, Michael Bruderly, Amethyst Smith, Adam Geiger, Jeffrey Bryant, Claudia Lopez (not pictured:) Chris Conrad, Jeffrey McMahon.



Sokol Scholars (left to right) Erik Hofer, Kera Lagios, Zain Bengali, Julie Albertus, Adam Janco (not pictured) Sarah Carson, Mark Dalton, Angkana Roy.



First Year Awards (front left to right) Mark Zakaria, Lauren Greenlee, Jason Bronkema (back left to right) Desiree Thayer, Albert Chao, Scott Harrison (not pictured) Justin Fitzpatrick.



Sabat Biochemistry Award Dr. Margaret Lomax, Cagri Besirli.



Scholarships (front left to right) Laura Khoury, Suzanne Blum, Jennifer Chang, Amethyst Smith, (back left to right) Laura Harley, David White, Sara Roberts, Michael Bruderly.



Senior Awards (front left to right) Carolyn Owen, David Zaziski, Tammy Durant, Jonathan Irish (back left to right) Prof. Michael Martin, Ryan Fields, Adam Geiger, Ron Gaba, Edward Luk, Cagri Besirli, Rahul Kohli, Andrew Haidle, Prof. Joseph Marino.



American Institute of Chemists Chemistry and Biochemistry Awards (left to right) Prof. James Penner-Hahn, Rahul Kohli, Andrew Haidle, Prof. Joseph Marino.



ACS Leadership Award (left to right) Prof. Peter Toogood, Carolyn Owen, Jonathan Irish, Prof. James Penner-Hahn.



S.N. Ege WISE Award (left to right) Prof. Seyhan Ege, Jennifer Meddings, Margaret Krasnoff.

Research Experiences for Undergraduates

The Department of Chemistry celebrated its 10th year as a host for the Research Experiences for Undergraduates (REU) Site Program, funded through the National Science Foundation (NSF). Under the direction of Professor Brian P. Coppola, this summer's REU program supported the participation of eight undergraduate students. Participants were chosen from a competitive pool of 200 applicants. Final selections were based on academic achievement, letters of recommendation, and interest in research. Students were assigned separately to ongoing research groups and worked with faculty, post-docs, and graduate students, taking part in multidisciplinary research projects, workshops, and technical presentations to obtain a better understanding of the research experience.

Students encountered first-hand how basic research is conducted, practicing a variety of skills needed as a researcher, including proposal and report writing, investigative studies, conducting experiments, analyzing data, and presenting their findings. Other activities included an industrial site visit, safety and scientific seminars, lunch meetings, and social functions that were organized to facilitate interaction among the visiting undergraduates, and with other REU host sites in Michigan. This summer research op-

portunity plays a very important and complementary role in undergraduate education. In addition, it helps students decide more realistically on their own inter-

est in subsequent research careers, and bridges the transition to graduate school for those who wish to pursue a research degree.

Research participants and their projects:

Jeffrey M. Bartolin from Baldwin-Wallace College (Banaszak Holl)
 "Synthesis of Ortho(difluoromethyl)aryl and Ortho(monofluoromethyl) Germanes and Continued Study of Weak Fluorine-Germanium Interactions"

Deniz Buyukisik from Ohio Wesleyan University (Townsend)
 "An Approach Toward Synthesis of 7-H-Pyrazolo-[3,4-d]-1,2,3-triazine"

Amanda Haes from Wartburg College (Gland)
 "Desulfurization of Benzenethiol on the Pt(111) Surface"

Carrie Kaminski from Alma College (Zellers)
 "Comparison of Polymer/Vapor Partition Coefficients from Gravimetric Method and Surface Acoustic Wave (SAW) Sensors"

Jennifer Larimer from Grinnell College (Morris)
 "Raman microprobe as a thermometer for packed capillaries"

Amy Swift from Swarthmore (Marsh)
 "Preparation of Glutamate Mutase Proteins"

Christine Tratz from University of Oklahoma (Ashe)
 "Synthesis of 2,2'-bis(boratabenzene)biphenyl zirconium dichloride for use in Catalysis of Polymerization Reactions"

Thomas Watson from Grand Rapids Community College (Banaszak Holl)
 bis[Bis(trimethylsilyl)methyl]germylene C-H insertion of CH₃CN

Bachelors Degrees

August, December, 1997 and May, 1998

CHEMISTRY DEGREES

Paulo B. Abada (*Koreeda*) – MD/PhD (USC)*
Vadim G. Astrakan (*Gordus*) – employed*
Bassel H. Atasi (*Pecoraro*)*
Regina Belenkaya (*Pugh*)
Erik R. Bialk
Keenan Bora (*Townsend*) – medicine
Daniel T. Chang (*Marsh*)
Melvin C. Dacres
Mark A. Dzendzel
Ryan C. Fields (*Pecoraro*) – medicine (Stanford)
Ron C. Gaba (*Koreeda*) – medicine (Wayne State)*
Margaret E. Gillis (*Pecoraro*) – medicine (UM)*
Karl J. Granskog (*Townsend*) – Pfizer
Andrew M. Haidle (*Coward*) – organic chemistry (Harvard)
Michael J. Herrera – AvTech Laboratories Inc.
Benjamin S. Hong – public policy (UM)
Teresa C. Hsu (*Zellers*) – chemistry (Cal Tech)
Jonathan M. Irish – immunology (Stanford)
Sajida L. Jackson (*Cordes*) – epidemiology (UM School of Public Health)
Li Tsz Lam – industry
Kevin Leach (*O'Brien/Morris*) – Bioanalytical Systems
David J. Lieberman – Great Lakes Chemicals
Anil Mitra (*Townsend*) – Dupont-Merck
Brian T. Molenda – dentistry
Jason Pontrello (*Penner-Hahn*) – intern (Parke Davis)*
Sarah E. Reybuck (*Rasmussen*) – chemistry (Stanford)*
Arif M. Sitabkhan (*Curtis*)
Joseph W. Styrna – Edward Jones Investments
Erika A. Taylor (*Toogood*) – chemistry (U. Illinois, Urbana-Champaign)*
Eric L. Wise (*Pearson*) – intern (Parke Davis)
Payam Zarehbin-Irani – (*Coon/Lawton*) – ophthalmology (Berkeley)*
David J. Zaziski (*Francis*) – chemistry (Berkeley)*

BIOCHEMISTRY DEGREES

Bassel H. Atasi (*Pecoraro*)
Cagri Besirli (*Lomax*) – MD/PhD (Washington University)*
Daniel T. Chang

Kristi M. Cowell – medicine (MSU)
David Crandall (*Goldman*) – medicine (Utah)*
Iman H. Daouk
Tammy Durant (*Goldman*) – medicine (UM)*
Ron C. Gaba (*Koreeda*) – medicine (Wayne State)
Neil A. Gardner (*Penner-Hahn*)
Eric A. Guisbert (*Engelke*) – graduate school*
Manish Gulati
Ramy A. Hassan – employed
Joseph M. Haurani (*Zand*) – medicine (Wayne State)*
Tracy M. Hobson (*Nichols*) – employed
Sam Shih-Kuang Hong (*Yocum*) – medicine*
Teresa C. Hsu (*Zellers*) – chemistry (Cal Tech)
Jonathan M. Irish – immunology (Stanford)
Sajida L. Jackson (*Cordes*) – epidemiology (UM School of Public Health)
Timothy A. Jatkoe (*Gaut*)
Abhay A. Khosla (*Cordes*)
Rahul M. Kohli (*V. Massey*) – MD/PhD (Harvard)
Joseph X. Kou (*Peliska*) – medicine (Wayne State)
Azizah Mainal (*Goldstein*) – physical chemistry (Malaysia)
Steven H. McKinley (*Kaufman*) – medicine (Vanderbilt University)
Jennifer A. Meddings (*K. Massey/Yocum*) – medicine (UM)*
Adarsh D. Pandit (*Ballou*)*
Arthur J. Peitch
Ruben Recabarren (*Goldstein*)*
Laura Schmidt (*Nichols*) – Environmental & Industrial Health (UM SPH)*
Jeffrey M. Shore (*Nooden/Peliska*)
John P. Snow (*Peliska*)
Krista Swaninger
Sara A. Tracy – Huron Valley Ambulance
Hoi Leung Wong
Lisa M. Zaddock – biochemistry (U. Nebraska-Omaha)
Melissa A. Zagorski (*Ramamoorthy*)
Payam Zarehbin-Irani – ophthalmology (Berkeley)

*Honors Degree (includes undergraduate thesis)

GIFTS

Contributions from private and corporate donors received from June 21, 1997 – June 30, 1998.

(* Indicates corporate matching funds.)

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Willard Memorial Fund

Richard Gerstell
Masako Toribara
Taft Toribara

ACS Alumni Social Hour

Monday, August 24, 1998

6:00 PM

Marriott Hotel

Copley Place

Boston, MA

Alumni News

E-Mail: chem.alum@umich.edu

BEFORE 1940

Milton C. Kloetzel (BS 1934, PhD 1937, Bachmann/Gomberg) writes that he also began his dissertation research with Prof. Gomberg, who retired before he was finished, so his Research Director of record was Prof. Bachmann. He remained at Michigan for a year then had short appointments on the faculties of Harvard and Depauw Universities. He ended up at the University of Southern California from which he retired as Academic Vice President and Professor of Chemistry. He has lived in Hawaii since 1975.

Millard S. Roberts (BA 1932, MD 1936) did not have the opportunity to have Prof. Gomberg as a teacher but remembers well Professors Smeaton and Schoepfle who, he says, were fabulous. He practiced general surgery in Kalamazoo for many years and now at 90 lives in Vicksburg, near there.

Robert A. Van Nordstrand (BS 1938, MS 1939) took "Early Retirement" from Chevron Research Co. at age 75 after a long career in the area of petroleum catalysis. He participated in the discovery of a new form of aluminum hydroxide which is now named "Nordstrandite".

1940 - 1949

Robert G. Craig (BS 1944, PhD 1955, F.E. Bartell) was honored June 7-8, 1997, by a symposium, "The Past, Current and Future of Dental Biomaterials", sponsored by the Dental School and the Kingery Prosthodontic Study Club. The Symposium celebrated the 10th edition of the text, "Restorative Dental Materials" by Dr. Craig.

Ralph E. Friedrich (BSC 1947) retired from the Dow Chemical Co. in 1983 and still lives in Midland. He has been recognized by the American Chemical Society in 1997 as a fifty year member.

Isabella Lugowski Karle (BS 1941, PhD 1944, Brockway) has been awarded the

1998 Ralph F. Hirschmann Award in Peptide Chemistry. This is an American Chemical Society Award sponsored by the Merck Research Laboratories for outstanding research in peptide chemistry.

James H. Lorenz (BSC 1948) retired from the Union Carbide Corporation in 1982 after 35 years in their silicone program where he was Director of their Renewable Energy contracts. He is a 50 year member of the ACS and during WWII was a B-24 pilot with the 8th. Air Force in England.

Harold W. Miller (BS 1943; MS 1948, U. of Colorado) is a retired nuclear chemist living in Boulder, Colorado.

Richard B. Northrup (BS 1943) retired as an analytical chemist from the General Electric Co. in Schenectady, NY, and is now living in Sun City West, Arizona.

William M. Spurgeon (PhD 1942, Fajans) retired from the University of Michigan, Dearborn Campus, in 1991. He lives in Southfield, Michigan.

Taft Y. Toribara (PhD 1942, Willard) is Professor Emeritus at the University of Rochester Medical Center where he was associated with the Environmental Medicine group. He writes that his group was interested in the toxicology of mercury and he was instrumental in developing a method for determining mercury levels along a single strand of hair, which retains a history of the levels of the metal in an individual's blood. Also, he and a student published a paper in 1956 on the microdetermination of phosphorus which, according to the Science Citation Index, has been cited over 7000 times. At age 81 he is still active and is the national squash champion in the over 80 age group. Since taking up the sport in 1960, he has won a national championship five times.

1950 - 1959

Avram Amith (BSC 1951; PhD 1960, Harvard (Physics)) retired as chief scientist from the Electro-Optical Products Division of the ITT Corporation and is now a Professor of Materials Engineering at Virginia Polytechnic Institute and State University at Blacksburg, Virginia.

Kenton E. Bentley (BSC 1950; PhD 1959, U. of New Mexico) is retired and living in Henderson, Nevada.

Leonard B. Bruner (PhD 1957, Smith) was recognized by the American Chemi-

cal Society in 1997 as a fifty year member. Dr. Bruner is still active as a consultant and lives in Manchester, Michigan

David H. Campbell (PhD 1953, Parry) has retired from the Ethyl Corporation but still lives in Baton Rouge. He keeps active managing a foreign language translation service from his home.

Michael P. Cava (PhD 1952, Bachmann/Dreiding) was recognized by the American Chemical Society in 1997 as a fifty year member. Prof. Cava is the Ramsay Professor of Chemistry at the University of Alabama in Tuscaloosa.

Joseph A. Chapple (BA 1955) has retired from the General Motors Corporation and is living in Flint, Michigan.

Norman J. Doorenbos (BSC 1950, PhD 1954 (Med Chem)) is Vice President for Academic Affairs at Auburn University. He was recognized by the American Chemical Society in 1997 as a fifty year member.

Elliott Greenberg (PhD 1955, Westrum) has retired from the Prairie State College in Illinois. He was recognized in 1997 by the American Chemical Society as a fifty year member.

Henry W. Habgood (PhD 1952, Fajans) was recognized by the American Chemical Society in 1997 as a fifty year member. He retired from the University of Edmonton and the Alberta Research Council in 1984 and now lives in Pleasant Bay, Nova Scotia.

George E. Hein (PhD 1959, PAS Smith) writes that after 23 years at Lesley College in Cambridge, Mass., he is planning to retire at the end of the 97-98 academic year. Lesley College serves advanced professionals in education, the social services and museums. Among his various achievements there, he was responsible for the establishment of a Program Evaluation and Research Group directed towards pre-college science and mathematics programs and also exhibits in museums. In the last few years, he has been a Fulbright Scholar at King's College (London), a visiting faculty member at the Museum Studies Department of the University of Leicester, and a visiting scholar at the Precollege Science Initiative Program at Caltech.

Raymond J. Jasinski (BSC 1954; PhD, Iowa State Univ.) is a senior scientist for Schlumberger-Dowell in Aberdeen, Scotland.

Robert C. Karpiuk (PhD 1953, Ferguson) retired as an Administrative Assistant from the Dow Chemical Co. in Midland around 1987. He was recognized by the American Chemical Society in 1997 as a fifty year member.

Bernard Manning (PhD 1950, Anderson) retired from the National Security Agency in 1990 but still serves as a consultant on security techniques. He was recognized by the American Chemical Society in 1997 as a fifty year member.

George A. Miller (PhD 1955, Halford) is Professor Emeritus at the Georgia Institute of Technology in Atlanta.

Elmer E. Most (PhD 1993, Smith) retired as a Senior Research Chemist from the E. I. duPont de Nemours Co. in North Carolina. He was recognized by the American Chemical Society in 1997 as a fifty year member. Dr. Most lives in Durham NC.

Edwin Przybylowicz (BS 1953, PhD 1956, MIT) chaired an NRC committee on Black and Smokeless Powder. The Committee's activities to study the feasibility of tagging propellents which might be used in bombs can be viewed on the internet at <http://www2.nas.edu/bcst/21e6.html>. Last fall, Dr. Przybylowicz was elected to the Bureau of IUPAC and the Executive Committee of IUPAC. He currently chairs the Finance Committee of IUPAC.

Leon I. Rechtman (BS 1950; DMD, U. of Alabama) is a practicing dentist in Doraville, GA.

Christine C. Rosenfield (BSC 1957, MD 1978; PhD 1960, Univ. of Alberta) is a physician specializing in mental health for the Commonwealth of Virginia.

Alice L. (Platt) Schwarz (BS 1952, MD 1958) is semi-retired and living in Grand Blanc, MI, with her husband, Heinz.

Sheldon G. Shore (PhD 1957, Parry) has been reappointed the Charles H. Kimberly Professor of Chemistry at Ohio State University. In 1997 he was awarded the University Distinguished Lectureship Award and elected as a corresponding member of the Bavarian Academy of Mathematical and Natural Sciences. In celebration of his 65th birthday, a special issue of the Journal of Main Group Elements, published by the Belgian Chemical Society, was dedicated to him.

Nancy L. Shawley (BS 1953, PhD 1975 (Biochem); MS Boston Univ. (computer science)) is a computer specialist in the

Department of Defense Dependents Schools located in Germany.

1960 - 1969

Clifford J. Ahola (BSC 1968) currently is living in Painesville, OH.

Paul L. Anderson (PhD 1966, Ireland) has retired and has moved to Auburndale, FL.

Marlin D. Buckmaster (PhD 1963, Stiles) has retired from the DuPont Co. and lives in West Virginia.

Elizabeth A. Irwin (BS 1966, Ms 1968; MD 1979, UCLA) has a medical practice specializing in obstetrics and gynecology in the Los Angeles area. Her husband is Francois Denis.

Walter A. Jankowski (MS 1964; BS Univ. of Minnesota (Computer Science)) has left the field of chemistry and is a team leader and systems analyst for TRW in Montana.

Philip D. Lafleur (PhD 1967, Griffin) has retired from the Eastman Kodak Co. and moved to California. He is going back to school to study psychology.

John G. Lanese (PhD 1962, Jaselskis) heads the Lanese Group, Inc., which consults in the Pharmaceutical Industry for regulatory compliance.

Klaus F. Loehr (BS 1962) has retired from his post with the Lockheed Corporation in Germany and is living in Hilton Head Island, SC.

George B. Lowrie, III (BSC 1966; MS Bucknell Univ. 1969) is retired and living in Ann Arbor.

Hubert C. MacDonald, Jr. (PhD 1969, H.B. Mark) is a Laboratory Manager for the Westinghouse Power Generation Div. in Pennsylvania.

Kenneth D. MacKay (BSC 1964; PhD 1960, Minnesota) is Vice President for Research and Development with the Henkel Corporation in Pennsylvania.

Robert G. Mallen (BS 1961, MD 1968) is a physician with a medical practice in Kentwood, MI.

Lowell R. McCoy (PhD 1967, HB Mark) has retired from Atomics International and now lives in Woodland Hills, CA.

Richard E. Rice (MS 1967) is now Associate Professor of General Education at James Madison University in Virginia.

Edward B. Sanders (PhD 1966, Martin) has been transferred to Peseux, Switzerland, where he is a Principal Scientist for Phillip Morris Europe.

George J. Shimp (MS 1963, MBA) is Manager of Cost Accounting for the Schwarz Pharma Manufacturing Co. of Nashville, IN.

Lola S. (Insel) Steinbaum (BSC 1967; MD) is Chief of Staff specializing in Internal Medicine at the local hospital in Pacific Grove, CA

H. Bradford Thompson (PhD 1953, MSU; Post. Doct. 1967, Bartell) retired from the University of Toledo as Professor Emeritus. He now lives in St. Peter, MN and was recognized by the American Chemical Society in 1997 as a fifty year member.

Marios P. Tsoukatos (PhD 1967, Gordus) has retired as Director of the Technological Applications Dept. of the Nuclear Research Centre in Greece. He is living in Athens.

Clifford G. Venier (BSC 1962; PhD 1966, Oregon State Univ.) has recently been promoted to Vice President for Advanced Technology at the Pennzoil Products Co. in Woodlands, TX. He joined Pennzoil in 1984. Prior to that he was on the staff of Texas Christian University for 13 years.

Po Sang Yuen (PhD 1968, Overberger) is President of Goldwater Filters, Inc., in Scarsdale, NY.

Richard J. Zielinski (PhD 1961, Elderfield) retired in April from Quest International. He is now living in Middleburg, OH.

1970 - 1979

Patricia E. (Davey) Baker (BSC 1978; MS 1996, Arizona State (Computer Sci.)) is a computer consultant for the faculty at Gilbert Community College in Gilbert, AZ.

Philip S. Bryan (PhD 1979, Kuczkowski) is Director of Health Imaging Research for Eastman Kodak Co. in Rochester, NY.

Richard T. Crane (BS 1973; MD 1978, Indiana U.) is a physician at the Western Wisconsin Ear, Nose and Throat Center in Eau Claire, WI. He was recently made a Fellow of the American College of Surgeons.

Robert M. Domeier (BSC 1979; MD) is an emergency physician at St. Joseph's Hospital in Ann Arbor.

Alan M. Donn (BSC 1971; MS 1979, Sangamon State U. (Computer Sci.)) is a senior service manager for the IBM Corporation in Tampa, FL.

Janet R. Elliott (BSC 1983; PhD 1980, Calif. Inst. of Technology) has recently relocated to La Jolla, California, and joined Agouron Pharmaceuticals as a research chemist.

Ruth E. Kelly Evans (BSC 1979; PhD 1986, Wayne State U.) is a staff scientist for the Bayer Corporation in Berkeley, CA.

Richard A. Kurnot (BS 1979; MS 1982, Michigan State U.; MD 1986, Wayne State U.) is an urologist in private practice and also a clinical assistant professor at the Uniform Services University of Health Sciences in Bethesda, MD.

Donald T. Freese (BSC 1977; MS 1982, Drexel Univ.) is an Associate of W. L. Gore and Associates in Pennsylvania.

Steven R. Geiringer (BSC 1975, MD 1979) is Professor of Physical Medicine and Rehabilitation at the Wayne State Medical School. He and his wife, the former Karen Bantel, still reside in Ann Arbor where his wife is on the faculty of the Business School.

Margaret M. (Martin) Goldberg (MS 1978; PhD 1987, U. of North Carolina (Environ. Chem.)) is a chemist at the Argonne National Laboratory in Illinois.

Duane D. Hall (MS 1976, BS 1978 (Med Chem)) is a pharmacist for St. Mary's Hospital. He lives in Ada, MI.

Mark A. Jandreski (BSC 1979; PhD 1987, Univ. of Toronto (Clinical Biochem.)) is a customer support consultant for Chiron Diagnostics in Massachusetts. He is a Fellow of the National Academy of Clinical Biochemistry.

Erich K. Jensen (BSC 1974) is Director of Worldwide Clinical Training, Development and Standards, for Parke-Davis Pharmaceutical Research in Ann Arbor.

Robert C. Job (PhD 1971, Curtis) is a research chemist for the Union Carbide Corporation in Bound Brook, NJ.

Robert D. Johnson (BSC 1976; PhD 1981, U. of Calif/Davis) is living in Ridgefield, CT.

Jeffrey D. La Haye (BSC 1979) is manager of process and equipment engineer-

ing for Motorola Semiconductor Products in Cary, NC.

Mary J. Leenheer (MS 1978, PhD 1981 (Oceanic Science)) is living in West Richland, WA.

Chaur-Sun Ling (PhD 1976, Sacks) is a technology leader for the Monsanto Co. in St. Louis.

James D. Lisius (BSC+BSE 1977; PhD 1985, U. of Illinois (Chem. Eng.)) is a physics teacher living in Farmington Falls, ME.

Eugene S. Lopata (PhD 1973, Blinder) has joined the Technical Staff of the Watkins-Johnson Company in California.

King Way Ma (PhD 1975, Groves) is Business Director for Asia CRI International, a part of Royal Dutch Shell, in Singapore.

Walter Maruszczak (BS 1978, Dearborn) is a specialist in automotive applications for Solutia, Inc., in Rochester, MI.

Eric M. Monberg (PhD 1977, Kopelman) is a distinguished member of the technical staff for Lucent Technologies in Princeton, NJ. His research is in the field of semiconductor crystal growth and optical fiber mats.

Betty Jeanne Morris (BSC 1978; MS 1981, Texas A&M U.) has moved to Longmont, CO, where she is a delivery project executive for the IBM Corporation.

Alan C. Mumby (BSC 1972) has been moved to Strasbourg, France, as General Manager of the European Division of Johnson Controls, Inc.

John S. Offord (BS 1973; MBA 1984, U. of Iowa) is a senior staff engineer for Johnson Controls and living in Brighton, MI.

Clayton B. Quinn (PhD 1972, Wiseman) is manager of the specialty fluids and emulsions division of the General Electric Co. in Waterford, NY.

Eric N. Randall (PhD 1971, H.B. Mark) is a member of the technical staff of Lucent Technologies' Bell Laboratories in Georgia.

Pamela K. (Brenkert) Reband (BSC 1976; MD 1982, U. of Mississippi) is medical director in the Department of Anesthesiology for the Wilkes Regional Medical Center in North Carolina.

Martin S. Skokan (BS 1978) writes from Hungary that he has lived in that country

since the Berlin Wall came down and has been fascinated by the transformation which has occurred.

Peter L. Thomas (BSC 1975, BSE 1978 (Elec. Eng.); PhD) is Assistant Professor of Science and Education at the University of Science & the Arts of Oklahoma at Chickasha.

Mark H. Tucker (BSC 1970, MD 1974) has been appointed Chief Medical Officer of commercial programs for Blue Cross - Blue Shield of Tennessee.

1980 - 1985

Edward W. Badger (1983; MS 1980, U. of Toledo) is a senior information specialist with the Ashland Chemical Co. in Columbus, OH.

Kerry A. Brandt (PhD 1984, Overberger) is a senior information scientist with the Rohm & Haas Co. in Philadelphia, PA.

Mark T. Brandt (BS 1982, MD 1986) is a urologist in Chicago. He writes that he and Trisha Miki were married in Honolulu in April, 1998.

Eugene P. Cisek (BS 1984) is a chemist for Starks Associates, Inc., in Buffalo, NY.

Marco A. Ciufolini (PhD 1981, Koreeda) is a Professor in Organic Chemistry at the Universite Claude Bernard at Lyon, France.

Bruce C. Crist (MS 1980) is a sales representative for Varian Instruments, Chromatography Systems, stationed in Washington.

Martin D. Dunne (BSC 1982, BSE 1983 (Chem. Eng.)) is regional sales manager for Chem-Trend, Inc., in Tennessee.

Robin L. Garrell (PhD 1984, Krimm (Biophysics)) is an Associate Professor of Chemistry and Biochemistry at UCLA. She was awarded the 1997 Hanson-Dow Award for teaching excellence and is President Elect of the Society of Applied Spectroscopy.

David H. Gorski (BSC 1984, MD 1988; PhD 1994, Case Western Reserve (Cellular Physiology)) is a Fellow in Surgical Oncology at the University of Chicago.

Juan Carlos Jaen (PhD 1984, Marino) is the Director of Medicinal Chemistry for Tularik, Inc., in South San Francisco.

Frederic W. Lickteig (BS 1980) has been promoted to Lieutenant Colonel in the

Marine Corp. and assigned to the faculty of the Army Command and General Staff College at Fort Leavenworth where he will be the marine aviation advisor.

Wan-Li Liu (PhD 1980, Overberger; MBA 1993) is an advanced senior chemist for the Mobil Chemical Company in Edison, NJ.

Melvin L. Luetkens (PhD 1984, Sattelberger; MBA 1993, Chicago) is manager of business development for the Amoco Corp. near Chicago.

Devi P. Malladi (PhD 1981, Filisko/Westrum) is manager of package development for Sun Microsystems in California.

Richard W. Muth (MS 1982) is the Executive Officer of the National Strike Force Coordination Center of the U.S. Coast Guard in Elizabeth City, NC.

Jonathan C. Noetzel (MS 1983) has been advanced to Lieut. Colonel and made Chief of the U.S. Air Force Operations Plans Division in Honolulu, HI.

Jerome C. Pando (BS 1984; PhD 1989, West Virginia U.) has recently been transferred to Sacramento, CA, where he is a senior chemist involved in chemical process development for the Aerojet Corporation.

Pareesh D. Patel (BSC 1983, MD 1990, PhD 1990 (Neuroscience)) has returned to Ann Arbor as a Research Scientist in the Mental Health Research Institute and a Lecturer in child and adolescent psychiatry.

Kristin Ann Peterson (BSC 1983; PhD 1989, Stanford U.) is a Senior Research Scientist with Southwest Sciences, Inc., in Santa Fe, NM.

Timothy D. Race (BS 1980) has joined Corrosion Control Consultants and Laboratories in Lombard, IL.

Renee Marie Rossi (BSC 1982, MD 1986) is an Assistant Professor of Otolaryngology at the Southwestern Medical School of the University of Texas in Dallas.

Joseph L. Sailors (BSC 1984; MD 1991, Wayne State U.) reports he is now working for a PhD degree in molecular medicine. He is living in Port Washington, NY.

Scott F. Stoeffler (BSC 1983; MS 1986, Northwestern (Forensic Chem.)) is a senior research microscopist for McCrone Associates in Downers Grove, IL.

Susan M. (Sosnowski) Szegedi (BSC 1984) is a chemistry teacher at the Farmington Public Schools. She is also completing work for a MS degree at Michigan State University.

Charles C. Tsai (BS 1984, MD 1989) is serving as a cardiologist with the Gould Medical Group, Inc., in Modesto, CA.

Gail E. (Ghastin) Underiner (BS 1984; PhD 1989, U. of Wisconsin) is a senior process chemist for the Cauldron Process Chemistry Co. in Malvern, PA.

William N. Vance (BSC 1981; PhD 1986, Stanford U.) is a Research Associate at Stanford University, Chemistry Department.

Robert B. Wilson, Jr. (PhD 1981, Sattelberger) has been named Director of the Chemistry and Chemical Engineering Laboratory of the chemicals division of SRI International in Menlo Park, CA.

Lili Yamasaki (BS 1982; PhD 1991, U. of Texas Health Science Cntr./San Antonio) is an Assistant Professor at Columbia University, NY.

1986 - 1989

James S. Bartunek (BS 1985; MD 1989, Wayne State Univ.) is in medical practice as a psychiatrist. He lives in Orion, MI.

Timothy G. Bee (BS 1987; PhD 1993, Univ. of Massachusetts; MBA 1997, Carnegie Mellon Univ.) has joined International Specialty Products in Wayne, NJ, as a business analyst for new products.

Pamela Bergquist (MS 1987) currently is finishing up her PhD degree in chemistry at Clark University in Massachusetts.

Janet L. Binder (MS 1986) is working on her PhD degree in philosophy and women's studies at the University of Minnesota.

Cynthia (Praski) Bolognese (BSC 1989) is in the final stages of her PhD research in microbiology at the University of Maryland.

Deborah W. Chen (BSC 1989; PhD 1995, Stanford U.) has completed her postdoctoral appointment at the University of Cambridge, England, and has accepted a position with Zeneca Pharmaceuticals in Wilmington, DE. Her PhD degree erroneously was attributed to the Univ. of Wisconsin in the last Newsletter.

David A. Cleary (PhD 1986, Francis) is an Associate Professor of Chemistry at Gonzaga University in Spokane, WA.

Jocelyn H. (Carag) Encarnacion (MS 1988) is living in Creve Coeur, MO. She reports she has a three year old son.

Jennifer (Petty) Guenther (BS 1989; MA 1990, Columbia Univ. Teachers Coll.) is a physics teacher at the Troy (Mich.) Athens High School.

John A. Hovanesian (BS 1988, MD 1992) is a Visiting Assistant Professor of Ophthalmology at the Univ. of California in Los Angeles.

Joseph T. Jarrett (BSC 1988; PhD 1993, MIT) has accepted an appointment as an Assistant Professor of Biophysics at the University of Pennsylvania in Philadelphia.

Thomas J. Johnson (BSC 1987; MBA, Michigan State) is manager of Laboratory Services for the KMart Corp. in Detroit.

Nancy Mae Kemling (BS 1986; PhD 1996, Wayne State U.) is a Research Associate in the Childrens Hospital of the Wayne State University Medical School.

Donna Kay (Dickie) Kniffen (BSC 1986; MS Oakland Univ. (Statistics)) is a customer lane leader for the BASF Corporation near Detroit.

William J. Kronenberg (BSC 1986) has been disabled since 1993 and unable to work.

Mary Beth (Westerdale) Kubitsky (BS 1987; MS 1995, Eastern Michigan U.) is a lecturer in physics at Eastern Michigan University in Ypsilanti.

Mark H. Levy (BSC 1986; PhD & MD 1990, U. of Illinois) is in medical practice with "Physicians of the North Shore" who provide medical services for Skokie and Northern Illinois. He also is a lecturer on lipid research, an Associate Professor at Rush Medical Center and a physician for a major NBA team.

Daniel J. Link (BS 1988, MD 1992) is an anesthesiologist with Burnham Anesthesiology in Chicago.

Shu-Ching Ma (PhD 1989, Meyerhoff) is a Senior Scientist at Sendx Medical, Inc., in Carlsbad, CA.

Julie-Ann Mancewicz (BS 1987; MS 1989, Penn State Univ) is attending the University London studying art restoration. She and Ruhi Arslanoglu were married in 1995.

Chris J. Noah (BSC 1987; MD 1991, Wayne State Univ.) is a family practice physician in Cheboygan, MI.

Jung Ki Park (BS 1985; MD 1989, Case Western Reserve Univ.) is a physician in Fort Lee, NJ, specializing in obstetrics and gynecology.

Michael K. Rosen (BS 1987, BSE 1987; CPGD 1988, Cambridge U.; PhD 1993, Harvard) is an Assistant Member in the Cellular Biochemistry and Biophysics Program at the Sloan-Kettering Cancer Center in New York. His research program involves the use of NMR in structural biology. He and Yuh Min Chook were married June 30, 1996.

Ellen D. Roussey (BS 1988) reports she will be a stay-at-home mom for a while looking after Alexandria, 2 years, and Cullen, 5 mos.

John A. Sandin, III (BS 1989, MD 1993) is a fifth year neurosurgery resident at the University of Wisconsin hospital in Madison.

Mia Ruth Schmiedeskamp (BSC 1988; PhD 1996, Univ. of Washington (Biochem)) is a freelance science writer living in Issaquah, WA. Her articles have appeared in *Scientific American*.

Benjamin J. Schwartz (BS 1986; PhD 1992, Univ. of California/Berkeley) is an Assistant Professor of Physical Chemistry at the Univ. of California at Los Angeles.

Marc H. Settineri (MS 1988, MD 1992) is an anesthesiologist at the Cortland Memorial Hospital in Cortland, NY.

Leo R. Sharkey (BS 1986; MS 1996, Ohio State U. (Mech. Eng.)) works for the Microelectronics Division of the IBM Corporation in Burlington, VT.

Jeffrey T. Strnad (BS 1987; PhD 1992, Carnegie Mellon Univ.) is a Technology Specialist with the Stepan Company near Chicago.

David P. Voss (BSC 1986; MS 1990, Michigan State U.) is the General Chemistry Laboratory Coordinator for Michigan State University in East Lansing.

William J. Weadock (BSC 1988, MD 1992) is a Fellow at the University of Michigan specializing in cross-sectional imaging.

Ann E. (Lukens) Weise (BS 1988) is an Environmental Health Specialist for the Boulder County Health Department in

Colorado. She and Cameron Weise were married in August of 1977.

P. Douglas Williams (PhD 1985, Curtis) is the Instrument Laboratory Manager for KALSEC, Inc., in Kalamazoo, MI.

Michael G. Yang (BS 1989) is a Professional Products Representative for Roche Laboratories, headquartered in Lancaster, NY.

Carolyn Ann Zanta (BS 1986; PhD 1997, Purdue Univ. (Biology)) is working via telecommuting as a software design specialist for the Purdue University Biomedica Center. She is living in Champaign, IL.

1990 – 1993

Diane L. Babuts (BS 1991; MD 1995, U. of Rochester) is a resident physician in pediatrics at the Children's Hospital, Strong Medical Center, Rochester, NY.

Lainie N. Baumgarten-Hoover (BS 1990, MD 1994) is a pediatrician in Gaithersburg, Maryland. Her husband, David M. Hoover (PhD 1997, Ludwig (Biophysics)) is a Fellow at the National Cancer Institute in Gaithersburg.

Teresa Sue (Layne) Becse (BSC 1991) is a chemistry services manager for MEMC Southwest in Sherman, TX.

Randall C. Boehm (PhD 1991, Lohr) is employed by the Intercontinental Chemical Co. in Loveland, OH.

Jean Marc Bovet (BSC 1986, PhD 1993, Sharp) is Vice President for Investigational Pharmaceuticals at Cirrus Pharmaceuticals, Inc., in Durham, NC.

Mary P. (Andrews) Bradley (MS 1990, PhD 1993, Crippen (Pharm. Chem.)) is a research scientist with the Rhone-Poulenc Agricultural Products Co. in Research Triangle Park, NC.

Linda M. Briggs (PhD 1990, Pecoraro) has left the chemistry field and is pursuing a career in physical therapy.

Stephen J. Brocchini (PhD 1990, Lawton) is a lecturer at the Center for Polymer Therapeutics, School of Pharmacy, University of London, England.

William D. Burk (BS 1991; JD 1996, Geo. Washington Univ.) is an attorney with Kirk Rankin and Associates in Rockville, MD.

Mike G. Chemaly (PhD 1994, Griffin) is employed as a field scientist and lab chem-

ist by the Earth Resources Corporation in Pennsylvania. He reports that he and Virginia Montalvo were married in September of 1997.

Tracy L. (Hill) Chinigo (BS 1990) is an analytical research scientist at Wyeth-Ayerst Research Laboratories in Pearl River, NY.

Joe S. Chomchai (BSC 1990; MD 1994, Wayne State Univ.) is a physician specializing in otolaryngology at the Detroit Medical Center.

Amy Jo (Wiersma) Cowart (BS 1993; MD 1997, Michigan State Univ. (Osteopathy)) is a Family Practice Resident physician at the University of Massachusetts Medical Center.

Scott P. Damask (BS 1993) is an Associate Scientist with the Parke Davis Pharmaceutical Research Laboratories in Ann Arbor. He is in the Cell Biology and Vascular and Cardiac Diseases section.

Jon P. Degnore (BS 1991; PhD 1997, Univ. of Florida) has joined the National Institutes of Health in Bethesda where he is doing research in Biophysical Chemistry.

Julie Ann Dixon (BSC 1992; PhD 1997, Univ. of Illinois) is doing postdoctoral research at Yale University.

Lhanh-Dung T. Do (BS 1991; MS) is a staff mass spectroscopist for the University of Illinois at Chicago.

Christopher Espinosa (BSC 1992; MD 1997) is a resident physician living in Oak Park, IL.

Kevin J. Forrestal (BS 1990; PhD 1997, U. of Calif./Irvine) is a senior research chemist with Quantum Materials, Inc., of San Diego, CA.

Brent M. Fuller (BSC 1993; MD 1997, Wayne State U.) is a resident physician in internal medicine and pediatrics at William Beaumont Hospital in Detroit.

Anne L. Gillian-Daniel (BSC 1993) was married on May 24, 1997.

Ravi Gutta (BS 1990; MD 1995, Wayne State Univ.) is a resident physician in ophthalmology at the University of Illinois in Chicago.

Monica A. Guzman-Rojas (MS 1993) is living in Tucson, AZ.

Bryan R. Harvey (BSC 1991; DDS 1997, Columbia Univ./NY) is a resident specializing in oral and maxillofacial surgery at the Ohio State University in Columbus.

Suzanne M. Harvey (BS 1991; JD 1997, Franklin Pierce Law Center) is an attorney specializing in intellectual property for Weintraub and Brady in Bingham Farms, MI.

Jeffrey D. Hsi (PhD 1990, Koreeda; MS, Indiana Univ.; JD, Rutgers Univ.) is an attorney in Chicago.

Steven G. Karseboom (BSC+BSE 1990; PhD 1997, U. of Texas/Austin (Chem. Eng.)) is a Senior Research and Development Engineer for the Albermarle Corporation in Baton Rouge, LA.

Sonya S. Khatana (MS 1990) is living in Leawood, KS.

Mitchell E. Klausner (BS 1993; MD 1997, Medical Coll. of Ohio) is a resident physician in Internal Medicine at the University of Cincinnati Hospital.

Albert H. Li (BS 1991; MD 1997, Wayne State U.) is a resident physician in general surgery at William Beaumont Hospital in Detroit.

Michael X. Li (PhD 1997, Lubman) is a research investigator for Bristol-Myers Squibb in Wallingford, CT.

Kei-Lee Liu (PhD 1994, Morris) is a senior process chemist with DuPont Taiwan, Ltd., living in Chung-Li, Taiwan.

Michalis G. Nicolaou (BS 1990; PhD 1996, U. of Kansas (Pharm. Chem.)) is a staff scientist with Amylin Pharmaceuticals in San Diego, CA.

Jennifer M. Pace (BSC 1991; PhD 1997, Wisconsin) is a postdoctoral research associate at the University of North Carolina in Chapel Hill.

Kathleen A. Lengemann Packard (BS 1991) is teaching chemistry in the Anne Arundel County Schools in Maryland. She is pursuing a MS degree in education at Towson University.

Suhithi M. Peiris (BS 1991; PhD 1996, U. of Chicago) has accepted an appointment as a research chemist at the Naval Research Laboratory in Washington, DC. She will be doing research on the reactions of energetic materials at high and pressures.

Anh Kim (Duong) Pham (BS 1992) is a medical sales representative for G. D. Searle Pharmaceuticals in Grand Rapids, MI.

Kimberly A. Pummill (BSC 1993; MD 1997, Wayne State Univ.) is a resident physician in general surgery at Detroit Medical Center.

Jeffrey A. Read (PhD 1993, Francis) is a Senior Battery Scientist with AER Energy Resources, Inc., in Atlanta.

David T. Reichel (PS 1993; MD 1997, Wayne State U.) is a resident physician in internal medicine at the Orlando Regional Medical Center in Florida.

Robert K. Reynolds (BS 1991) is a quality assurance engineer for the Allied Signal Co. (ADCO) in Jackson, MI.

Scheherazade Rostam-Abadi (BSC 1993) is a teacher in the Outdoor Education Program of Nature's Classroom in Royal Oak, MI.

Andrew A. Russell (BS 1993; MD 1997, Medical Coll. of Ohio) is a resident physician in family practice at the Sharp Memorial Hospital in San Diego, CA.

David J. Schwartz (BS 1990; PhD 1996, U. of Calif./Berkeley) is a senior research chemist with the Dow Chemical Co. in Freeport, TX.

William J. Smith, III (MS 1993) went to work for Eli Lilly & Co. on completion of his MS degree. After three years with them, he was given an educational leave of absence to complete his doctoral work with Prof. W. R. Roush at Indiana. When Prof. Roush left Indiana to come to Michigan, Bill accompanied him and is now back in graduate school in Ann Arbor.

Michelle M. (Poppelreiter) Spencer (BS 1991, B.Pharm. 1995) is employed as an Oncology Clinical Pharmacy Specialist at Loma Linda University Medical Center in California.

Kimberly Ann (Kramer) Stickland (BS 1992; PhD 1997, Univ. of Arizona (Pharmacology)) is a Postdoctoral Fellow at the Arizona Cancer Center in Tucson, AZ.

Ramachandran P. Subrayan (PhD 1993, Rasmussen) is a research and development chemist for King Industries in Norwalk, CT.

Weihong Tan (PhD 1993, Kopelman) is an Assistant Professor at the University of Florida at Gainesville. In the last year he has been honored with a Young Investigator Award from the Arnold Beckman Foundation, a Faculty Career Award from the National Science Foundation and a Young Investigator Award from the Office of Naval Research.

Him-Tai Tsang (PhD 1990, Penner-Hahn) has moved to Maryland where he is an Instructor in Chemistry at Montgomery

College. His wife, Mei-Ching Fok, is a physicist at the Goddard Space Flight Center near Washington.

Benson Tsai (PhD 1990, Overberger) and his wife, **Shu-Ching Ma** (PhD 1989, Meyerhoff), both are employed as research chemists by the Sendx Medical Corporation in Carlsbad, CA.

Richard L. Waite (BS 1991) is a chemistry teacher at the Mother Guerin High School in River Grove, IL.

Li-Wei Xu (PhD 1991, U. of Chicago; Postdoctoral 1993, Kuczkowski) is a Visiting Assistant Professor of Physics at the University of Toledo.

Jennifer W. Zalenko (BS 1993) is a consultant for the Sandy Corporation near Detroit.

1994 – 1998

Angela R. Adams (BSC 1997) is a territorial business manager for Bristol-Myers Squibb with headquarters in Miami, FL.

Theresa M. Ambrose (PhD 1997, Meyerhoff) is a postdoctoral fellow in clinical chemistry and pathology at Washington University of St. Louis.

Laura J. (Emerich) Anna (PhD 1996, Marino) is an Assistant Professor of Chemistry at Millersville University in Pennsylvania.

Edward J. Armbruster (BS 1995; MA 1998, Boston Univ.) is a laboratory supervisor in rheumatology at the Boston University School of Medicine.

Michael J. Baldwin (PhD 1992, Stanford U.; Postdoc 1997, Pecoraro) has accepted a position as Assistant Professor of Chemistry at the University of Cincinnati. His wife is **Kimber G. Clark** (PhD 1994, Penner-Hahn).

Jerrell D. Brenner (PhD 1995, Barker) is a Postdoctoral Fellow in the Chemistry Department of the University of Pennsylvania in Philadelphia.

Claudia C. Cotca (BSC 1997) is an intern with Parke-Davis in Ann Arbor.

Brian P. Davies (BS 1997) is employed by Phyto Laboratories in Germany.

Bonnie L. Dickler (BSC 1997) is pursuing a degree in applied physiology with plans to graduate in June of 1998.

Trung M. Doan (BS 1996) is a territory manager for Warner Chilcott Co. in phar-

maceutical sales. He is stationed in the Detroit area.

Danette A. Domagala (BS 1996) has been advanced from intern to synthetic organic chemist for the Warner-Lambert Parke-Davis Research Laboratories in Ann Arbor.

Scott H. Druker (PhD 1995, Curtis) works as a research chemist for the FMC Corporation in Doylestown, PA.

Alexander P. Ducruet (BS 1997) is temporarily working as a research specialist in surgical oncology at the University of Pittsburgh Medical Center.

Ken Wen-Kui Fang (PhD 1997, Pearson) has accepted a position as research chemist with Allergan, Inc., in Irvine, CA.

Brendan J. Foran (PhD 1996, Lee) is a materials analyst with the SEMATECH Corp. in Austin, TX.

Luis A. Gomez (BS 1995 (Chemistry & Physics)) is an engineer for OSMIC Coatings, in the Detroit area.

Nancy W. Goroff (PhD Univ. of California/Los Angeles; Postdoctoral 1996-97, Ege/Coppola) has joined the Department of Chemistry at the State University of New York at Stony Brook.

Sridhar Govindarajan (PhD 1997, Goldstein) has accepted a position as scientist with Sulfonics, Inc., which is associated with the University of Florida at Gainesville.

Tony O. Greco (BS 1997) is a chemist with Instrumentation Laboratories in Ann Arbor.

Charles W. Gundlach (MS 1996) reports that he and Marnay Zell were married in August of 1997. He is continuing as a graduate student in Chemistry at Michigan.

Xuan Guo (PhD 1996, Meyerhoff) is a research scientist with Lifescan, Inc., in San Jose, CA.

Ling He (MS 1996) is a senior scientist for the Schering-Plough Corporation in New Jersey.

Samir N. Kelada (BS 1997) plans to enter the School of Public Health at the University of Michigan in the fall of 1998.

Burton H. Kim (BS 1997) is an account manager assistant with Kletner Advertising in New York. Kletner Adv. handles health care and pharmaceutical accounts.

Danny Sung-Ung Kim (BS 1995) works as a research chemist for the Unilever Research Corp. in Flushing, NY.

Yongseong Kim (PhD 1996, Morris) is a Postdoctoral Research Associate at the Los Alamos National Laboratory in New Mexico.

Chad A. Link (BS 1997) is working temporarily at Henry Ford Hospital in Detroit. He plans to enter the Michigan State College of Osteopathy in August of 1998.

Hui Liu (PhD 1997, Rasmussen) has a postdoctoral position with the Coating Research Institute at Eastern Michigan University in Ypsilanti.

Nicole R. (Ramberger) Lockhart is a research associate with Lumigen, Inc., in Detroit.

Holly J. Logue (BS 1997) is living in Saline, MI.

Todd J. Marion (BSC 1994) is a chemist for the Ashland Chemical Co. in Texas.

Paul Milne (PhD 1996, Lubman) is seeking employment in the Ann Arbor area. His wife, Elizabeth A. Todd (PhD 1996, Morris) is employed by Kaiser Optical Systems in Ann Arbor.

Michel Molinier (Post doctoral 1998, Curtis) has accepted a position with Allied Signal Environmental Catalysts in Tulsa, OK.

Nicole N. (Miller) Morris (MS 1995) is an Advanced Research Chemist in the Abrasives Division of the 3M Co. in Minneapolis.

Suzanne M. (Argentine) Olds (PhD 1995, Francis) has accompanied her husband to Thailand where he is involved in setting up a new refinery.

Athanasia D. Panopoulos (BSC 1997) is engaged in pharmaceutical research on HIV proteases at the Warner-Lambert Parke-Davis Laboratories in Ann Arbor.

Andrew J. Phelka (BS 1997) is a Peace Corp. volunteer teaching chemistry in Namibia, Africa.

Jonathan M. Plawchan (BSC 1997) is working for PICON, Inc., in Detroit.

Stuart H. Pullen (PhD 1998, Sension) currently is a postdoctoral scholar at Duke University working with Prof. John Simon.

Guangyu Qian (PhD 1996, Lubman) is a research scientist for the Chiron Corporation in Emeryville, CA.

Aaron M. Raphael (BS 1996) finds law school at Emory University challenging plus being a member of the International Law Review requires a lot of attention.

He plans to specialize in intellectual property.

Michael T. Render (BS 1995) is employed by the Akzo Nobel Co. in Troy, Michigan. His work involves the synthesis of acrylic emulsions, polyesters, polyurethanes and analysis of various mixtures of these polymers.

Pamela Riggs-Gelasco (PhD 1995, Penner-Hahn) appeared in the Nov. 3, 1997, issue of C&E News as a participant in the MIT "Conference on Careers in Education at Principally Undergraduate Institutions". She is a postdoctoral scholar working with Dr. JoAnne Stubbe at MIT.

Ben A. Robinson (BSC 1996) has a job with Janssen Pharmaceutica in Ann Arbor, a Belgian Company which maintains a small laboratory in Ann Arbor.

Luis Rodriguez (BS 1997) is living in Chicago.

Steven W. Roeder (PhD 1997, Gordus) is a chemist with the Tetra Technologies Corporation in Texas.

Pernilla Rollin (MS 1997) is a scientist for the Hoffmann-LaRoche Corporation in New Jersey.

Charles P. Rospierski (BSC 1994) is in the MBA program at Ohio State University.

Robert D. Schiller (MS 1994) is a senior development chemist for the BASF Corporation in Wyandotte, MI.

Reed G. Selby (BS 1997) is a pharmaceutical sales representative for Abbott Laboratories stationed in California.

Karen E. (Ramos) Sexton (BSC 1995) is a research chemist with the Esai Research Institute in Andover, MA.

Ted A. Skolarus (BSC 1997) is a user planning analyst in the computer support division of the Ford Motor Company. He also has an independent business accessing the Amway Servicing Corporation.

Eleanor Jane Slater (BS 1997) is a product development chemist for PPG Industries in Natrona Heights, PA.

Jeffrey D. Smithers (BSc 1997) is spending the 1997-98 year as a Fulbright Scholar in Lubeck, Germany. He plans to enter the Vanderbilt University Medical School in the summer of 1998.

Jennifer A. Sowinski (PhD 1997, Toogood) has accepted a position as research investigator for the Searle Pharmaceutical Co. in Skokie, IL.

Tresa M. Staeven (BSC, BSE 1997) is a report coordinator for Weyco, Inc., in East Lansing, MI.

Karin Ann Stein (MS 1996) is a research scientist for Microcide Pharmaceuticals in San Jose, CA.

Chad A. Van Huis (BSC 1997) is a chemist at the Warner-Lambert Parke-Davis Research Laboratories in Ann Arbor.

Seth J. Vander Muelen (BS 1995) is a research analyst with Buck Consultants in Cleveland Heights, OH.

Rajesh S. Walavalkar (PhD 1994, Pearson) has been transferred to Asbury Park, NJ, by his employer, the Libenn Aroma Co., a perfume and aroma manufacturer.

Yamin Wang (PhD 1998, Koreeda) is a research chemist for the Pharmaceutical Division of the Bayer Corporation in West Haven, CT.

Brian C. Weinrick (BS 1996) is a science teacher with the Peace Corp. stationed in Eritrea.

Kevin R. Winer (BS 1997) is employed at the Regional Criminalistics Laboratory of the Police Department in Kansas City. He does DNA and trace evidence analyses.

Ziyang Wu (PhD 1994, Moore/Lee) is a project leader for the Essex Specialty Products Corp., a subsidiary of the Dow Chemical Co. She and her husband, Zhijian Zhu, live in Southfield, MI.

Zhijian Zhu (PhD 1996, Townsend) is on the scientific staff of the Parke-Davis

Pharmaceutical Research Laboratories in Ann Arbor.

THE FOLLOWING NEWS ITEMS ARE FROM NON-ALUMNI FRIENDS OF THE CHEMISTRY DEPARTMENT

Mary Sue (Kellams) Rulfs, wife of former Professor **Charles L. Rulfs**, has moved to Iowa City, IA, to be near her daughter.

(If errors or misstatements are noted in any of the news items, the editors of the Newsletter would appreciate their being called to their attention. Mistakes can, and do, creep in inadvertently or due to errors in the official records. Corrections can easily be inserted in the next edition.)

In Memoriam

We were sorry to learn of the deaths of the following alumni, alumnae and friends of the Department.

Gladys C. Barth, former employee of the Chemistry Store, died November 10, 1997 in Dixon, IL. Older alumni will remember Gladys as the major domo of the second floor dispensing stand who ruled dispensing and returns with an iron hand for 28 years. She was a former army nurse, administered her domain in true army style, and was somewhat of a legend in the Department. The stand was never the same after she retired.

Jeremy K. Burdett (MS 1968; PhD 1972, Univ. of Cambridge, England (Phys Chem)) died unexpectedly in 1997 in Kalamazoo, MI. The day before he had been in Ann Arbor as the guest of the Department and had given a talk. At the time of his death, he was a Professor of Chemistry at the University of Chicago.

John Controulis (PhD 1950, Bachmann) died May 30, 1997 in Morristown, NJ. He retired from Warner-Lambert Corpo-

ration as Manager of Product Evaluation and Planning.

Russell E. Curtice (BS 1953; PhD 1964, Oregon State Univ.) died in 1996 in Philadelphia. He was an Emeritus Assistant Professor of Chemistry at the University of Rutgers at Camden. He left a bequest to the Department endowment fund.

Vincent M. Drost (AB 1932, MS 1934) died of pancreatic cancer on May 30, 1997 in Summerland Key, FL. His wife, Wilver I. (Brown) Drost, also a Michigan graduate although not a chemistry major, predeceased him in 1993.

Carl E. Evans (MS 1932) died February 12, 1995 in Sandusky, OH. Before retiring, he had been Vice President for Production at the Sandusky Foundry and Machine Company.

Jean M. (Rogers) French (BS 1948) died on August 3, 1996 in Oak Ridge, TN. She had been employed as an analytical chemist by the Union Carbide Corporation in their Y-12 plant at Oak Ridge.

Oswald H. Greager (PhD 1929, F.E. Bartell) died October 8, 1996 in Kennewick, WA. He had been a research chemist with the General Electric Company.

Elbert H. Hadley (BS 1936, MS 1937; PhD 1940, Duke Univ.) died in North Adams, MA.. He was Emeritus Professor

of Chemistry and former Dean of the College of Science at Southern Illinois University at Carbondale.

Philip F. Jackisch (PhD 1965, Ireland) died in Baton Rouge, LA. He had been a research chemist for the Ethyl Corporation in Baton Rouge.

Warner M. Linfield (MS 1941, PhD 1943 (Pharm Chem)) died in Tamarac, FL. He had been a research leader at the U.S. Department of Agriculture Regional Research Laboratory in Philadelphia.

Edward L. Morehouse (BSC 1942) died in 1992. No details are available.

Lloyd R. Rexer (BS 1947) passed away in 1997. He retired from the Chrysler Corporation and was living in Trenton, MI.

Bernard W. Rottschaefer (PhD 1939, Schoepfle) died in 1998, in Wyomissing, PA. Further details are not available.

William S. Struve (BS 1937, PhD 1940, Bachmann) died in 1997 in New Jersey. He retired as Director of Color Research.

Doris M. (Shapiro) Trevas (MS 1939) died on July 18, 1997 in Manhasset, NY. She was a Professor at Nassau Community College.

James H. Zwemer (MS 1948) died in Lithonia, GA in 1997. He retired as Vice President of the Environmental Chemistry Division, Monsanto Company.

FACULTY

- Arthur J. Ashe III**, Professor. *Organometallic Chemistry*.
- Mark M. Banaszak Holl**, Assistant Professor. *Synthetic and Mechanistic Solution, Surface, and Solid State Chemistry*.
- John R. Barker**, Professor. *Atmospheric, Oceanic and Space Sciences and Chemistry, Chemical Kinetics, Atmospheric Chemistry*.
- Larry W. Beck**, Assistant Professor. *Analytical NMR spectroscopy of Materials; Zeolite Catalysis*
- Mary Anne Carroll**, Associate Professor Chemistry, Atmospheric, Oceanic and Space Sciences. *Atmospheric Chemistry*.
- Brian P. Coppola**, Associate Professor, Organic Chemistry. Coordinator of Undergraduate Organic Chemistry Curriculum. *Science Learning and Instructional Methods*.
- Gene H. Cordes**, Professor, Chemistry and Medicinal Chemistry. *Molecular Design; Enzymatic Reaction Mechanisms; Biochemistry*.
- Dimitri Coucouvanis**, Professor. *Synthesis, Structures and Reactivities of Metal Clusters and Supramolecules*.
- James K. Coward**, Professor, Medicinal Chemistry and Chemistry. *Bioorganic Chemistry and Medicinal Chemistry*.
- M. David Curtis**, Professor. *Organometallic and Conducting Polymers*.
- Thomas M. Dunn**, Professor. *Optical Spectroscopy of Large (benzenoid and fused ring systems) and Small (mainly heteronuclear di- and triatomic) Molecules. R2PI Jet Spectra of Condensed Ring Aromatic Molecules and the Study of Conformers and their Possible Interconversion*.
- Seyhan N. Ege**, Professor. *Heterocyclic Reactive Intermediates*.
- B. J. Evans**, Professor. *Solid State Chemistry: Electronic and Magnetic Materials*.
- Christine E. Evans**, Assistant Professor. *Analytical/Physical Chemistry*.
- Anthony H. Francis**, Arthur F. Thurnau Professor. *Magnetic Resonance, Vibrational and Electronic Spectroscopy of Materials*.
- John L. Gland**, Professor, Chemistry, Chemical Engineering, and Applied Physics. *Solid State and Surface Chemistry, Physical Chemistry*.
- Gary D. Glick**, Associate Professor. *Bioorganic Chemistry, Molecular Recognition*.
- Richard A. Goldstein**, Associate Professor and Research Scientist, Chemistry and Biophysics Research Division. *Computational Molecular Biophysics, Physical Chemistry*.
- Adon A. Gordus**, Professor. *Radioanalytical-Radiation Chemistry*.
- Henry C. Griffin**, Professor. *Nuclear Chemistry: Gamma-Ray Spectroscopy of "Hot" and "Cold" Nuclei*.
- Nancy K. Kerner**, Lecturer, Coordinator of General Chemistry Laboratory. *Chemical Education: Learning and Instructional Methods*.
- Raoul Kopelman**, Kasimir Fajans Professor. Chemistry, Applied Physics, and Physics. *Analytical/Physical/Biophysical Chemistry*.
- Masato Koreeda**, Professor. Chemistry and Medicinal Chemistry, *Synthesis of Natural Products. Small Molecule-DNA Interaction, Chemical Carcinogenesis, Glycobiology*.
- Robert L. Kuczkowski**, Professor. *Micro-wave Spectroscopy of Weakly Bonded Complexes*.
- Richard M. Laine**, Associate Professor, Materials Science and Engineering and Chemistry. *Materials Chemistry*.
- Richard G. Lawton**, Arthur F. Thurnau Professor. *Bioorganic Reagents as Chemical Probes of Molecular Architecture*.
- Lawrence L. Lohr**, Professor. *Theoretical Studies of Molecular Structure and Reactivity*.
- David M. Lubman**, Professor. *Biological Mass Spectrometry, Spectroscopy and Instrumentation*.
- Joseph P. Marino**, Professor and Chair. Chemistry and Medicinal Chemistry. *New Synthetic Methods and Strategies for Natural Product Synthesis*.
- E. Neil G. Marsh**, Assistant Professor. *Enzymes: Structure, Mechanism, and Specificity; Protein Engineering and Molecular Recognition*.
- Mark E. Meyerhoff**, Professor. *Bioanalytical Chemistry, Electrochemical and Optical Sensors*.
- Michael D. Morris**, Professor. *Analytical Laser Spectroscopy and Imaging; Electrophoretic Separations*.
- Kathleen V. Nolte**, Lecturer III. *Organic Biochemistry*.
- William H. Pearson**, Professor. *Synthetic Organic Chemistry*.
- Vincent L. Pecoraro**, Professor. *Synthetic Inorganic and Bioinorganic Chemistry*.
- James E. Penner-Hahn**, Professor. *Biophysical Chemistry and Inorganic Spectroscopy*.
- A. Ramamoorthy**, Assistant Professor and Research Scientist, Chemistry and Biophysics Research Division. *Structural Studies of Biological Molecules*.
- Paul G. Rasmussen**, Professor. *Polymer/Inorganic Chemistry*.
- William R. Roush**, Warner Lambert/Parke Davis Professor. *Organic Chemistry*.
- Richard D. Sacks**, Professor. *High Speed Analytical Separations*.
- Roseanne J. Sension**, Assistant Professor. *Physical Chemistry, Ultrafast Laser Spectroscopy*.
- Robert R. Sharp**, Professor. *Multidimensional and Multiquantum NMR of Paramagnetic Systems*.
- Leroy B. Townsend**, Professor, Medicinal Chemistry and Chemistry. *Design Synthesis and Biological Evaluation of Heterocycles and Nucleosides*.
- Edwin Vedejs**, Moses Gomberg Professor. *Organic Chemistry*.
- Barbara J. Weathers**, Lecturer, and Lecturer in Comprehensive Studies Program.
- John R. Wiseman**, Professor. *Synthetic Organic Chemistry and Mechanisms of Chemical Reactions*.
- Charles F. Yocum**, Professor, Biological Sciences and Chemistry. *Biological Chemistry of Photosynthesis*.
- Edward T. Zellers**, Associate Professor Chemistry and Environmental and Industrial Health. *Environmental-Analytical Chemistry*.
- Erik R. P. Zuiderweg**, Professor, Chemistry and Biophysics. *NMR Studies of Biomacromolecular Conformation and Dynamics in Solution*
- Professors Emeriti:** **Lawrence S. Bartell, S. M. Blinder, Daniel T. Longone, Christer E. Nordman, Lawrence J. Oncley, Peter A. S. Smith, Milton Tamres, Robert C. Taylor, Edgar F. Westrum, Jr.**

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