

# University of Michigan Chemistry NEWSLETTER

## Letter from the Chair

Warm greetings from Ann Arbor and the Department of Chemistry. The past year has been a rewarding and exciting one for the Department. We have recruited four new assistant professors to the Department, and they will begin this September. We have also hosted two major symposia this summer in the 8th International Meeting on Free Radicals honoring the 100th anniversary of the discovery of organic free radicals by Moses Gomberg and the 16th Biennial Conference on Chemical Education. The chemistry buildings have undergone few changes, but the reorganization of space to accommodate the new hires always remains a high priority and an interesting challenge.

In summarizing our faculty recruitment this past year, the Department faculty and I believe that we have hired four of the most outstanding candidates in the nation. For the first time in recent history, we have hired someone jointly with another College, namely Pharmacy. We are pleased to have Dr. Anna Mapp join our faculty as Assistant Professor of Chemistry and Assistant Professor of Medicinal Chemistry. Anna has a strong background in synthetic organic chemistry having received her Ph.D. with Clayton Heathcock at Berkeley, and is coming from a postdoctoral stay in the laboratory of Peter Dervan at Cal Tech. Part of Anna's research program will focus on the understanding of transcription, an early step in gene expression. Anna's research laboratories will be on the third floor of the Willard H. Dow building.

Another addition to our faculty is Dr. Adam Matzger who comes to us with a Ph.D. from Berkeley working with Peter Vollhardt, and a postdoctoral at Cal Tech with Bob Grubbs and Nate Lewis. Adam's research interests include organic materials and polymer chemistry. He will be an important addition to both the organic cluster as well as our efforts in materials chemistry.

A third hire this year also comes from Berkeley and is Dr. Zhan Chen who will be Assistant Professor in analytical chemistry. Zhan did his Ph.D. research with Professor Herb Strauss and then a postdoctoral with Gabor Samorjai at Berkeley on molecular characterization of polymer surfaces using vibrational spectroscopy. Zhan plans to study polymers and biopolymers by using advanced optical techniques. He will be a strong addition to both the analytical and physical chemistry groups.

In an effort to build a strong theoretical physical chemistry subgroup, we have hired Dr. Eitan Geva who received his Ph.D. from Hebrew University in Jerusalem, and then did postdoctoral work in the U.S. working first with Jim Skinner at Wisconsin, and more recently with Greg Voth at the University of Utah. Eitan is interested in understanding dynamics, chemical reactivity and spectroscopy in condensed matter. We are very pleased and excited about having these four young colleagues begin their academic careers at Michigan. More details regarding their research programs follows in the new faculty section of this newsletter.

## Contents

Letter from the Chair .....	1
Spotlight Profiles .....	2
New Faculty .....	4
Faculty News .....	7
Symposia and Special Events .....	8
Graduate Program News	
Graduate Awards .....	11
Doctoral Degrees .....	14
Undergraduate Program News	16
Undergraduate Awards .....	18
Summer Research Programs	20
Undergraduate Degrees .....	21
Spotlight Endowment .....	22
Gifts .....	23
Alumni News .....	25
In Memoriam .....	29
Faculty Listing .....	30
Alumni Reply	
Form .....	inside back cover

## 2000

The Regents of the University of Michigan:  
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*ex officio*. Lee C. Bollinger, president.

The University of Michigan is an equal opportunity/  
affirmative action employer.

Other faculty news in the Department includes the promotion of Assistant Professor Neil Marsh to Associate Professor with tenure, effective September 1st, 2000. One of Neil's research projects involves, "How do enzymes generate and control free radicals", funded by NIH. After returning from a sabbatical leave, Professor Jim Penner-Hahn has accepted a three year appointment as Associate Vice-President for Research of the University, effective May 1, 2000. This past year has included some retirements from the faculty. Professor Rich Lawton officially retired on January 1st. Professor John Wiseman will begin a retirement furlough in September of 2000, and Professor Seyhan Ege will officially retire on May 31st, 2001. We will dearly miss the outstanding and singular teaching contributions in organic chemistry of these three colleagues.

A number of significant and very positive additions to the administrative staff of the Department have occurred this past year. We have hired Mr. Tim Wade as an administrative manager to oversee the operations of the Department, supervise all of the staff and assist the Chair in implementing departmental policies. Tim comes to us with more than 20 years of experience in the Medical School. We hired a senior business manager, Laura

Hornbeck, who will supervise the business office. Because of the increased grant activity and departmental accounts, the business office has been expanded to include 2 more positions, bringing the total team to 6 people.

On June 25th, 2000, the President of the American Chemical Society, Dr. Daryle H. Busch, presented to the University and the Department an historic chemical landmark plaque to commemorate Moses Gomberg's discovery of organic free radicals in 1900. The ceremony included biographical and scientific descriptions of Gomberg and comments from Dean Shirley Neuman. The plaque will be installed on a wall in the atrium of the 1988 chemistry building for everyone to see. We are particularly proud of this citation because it marked the first major discovery in organic chemistry in the United States, and was accomplished by one of Michigan's most distinguished faculty members.

At the last National Meeting of the ACS in San Francisco, April, 2000, the Department hosted an annual reception for alumni and friends. I especially enjoyed renewing acquaintances with many of you and look forward to seeing you and others at future receptions. We expect to have another alumni reception next April, 2001 at the meeting in San

Diego. The Departmental Alumni and Industrial Advisory Committee met last year, in October to catch up on the recent additions and activities of the Department. They are scheduled to meet this year on November 10, 2000.

Thanks to your generosity, the past year has been a good one for gifts and financial support to the Department. I wish to personally acknowledge your contributions and hope that they will continue. The major part of these gifts are directed towards undergraduate scholarships and summer research internships and for graduate student support in the summer. The very competitive national scene for quality undergraduates and graduate students is very intense, and we need to be in a position to recruit the best prospects.

Finally, I wish to report that the University initiative in the Life Sciences is progressing well and ground will be broken this year for a building to house the Life Sciences Institute. Another building is planned for Undergraduate Education in the Life Sciences. Dean Shirley Neuman is very determined to integrate the undergraduate experience in the Life Sciences with the exciting new research directions. The Department of Chemistry expects to play a major role in the development and success of the Life Sciences Initiative.

Best personal regards, J. P. Marino

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## Spotlight Profiles on Faculty, Graduate Students and Undergraduates

We highlight one faculty member, one graduate student and one undergraduate student to let you know of their special accomplishments in the past year. Although the choice is difficult, considering the numbers of outstanding people in Chemistry at Michigan, we hope you agree this group deserves merit.

### Faculty Member

Professor Mark Meyerhoff joined the Chemistry Department faculty in 1979 and is currently in the midst of his 3rd sabbatical leave. During the last 10 months, Professor Meyerhoff has spent half of his time working closely on collaborative research projects with two major biomedical companies who are utilizing some of the electrochemical sensor technology developed in his laboratory to devise new products suitable for monitoring certain chemical species (blood gases, electrolytes, heparin,

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etc.) in whole blood samples. Professor Meyerhoff has remained in Ann Arbor during this period, but has made frequent trips to Massachusetts and Minnesota, headquarter sites for the two companies. It has been a very enjoyable period, after having spent two hectic years serving as the Department's Associate Chair for Graduate Affairs.

Professor Meyerhoff's research program over the years has been broadly based in the area of bioanalytical chemistry, with particular emphasis on the development of novel polymer membrane-based electrochemical sensors for biomedically important analytes. His group's recent work on a new type of non-equilibrium potentiometric measurement system for detection of polyions (e.g, heparin, protamine, etc.), has resulted in a number of patents, and many papers describing both the theory and practical bioanalytical applications of this novel technique. Professor Meyerhoff's group has recently demonstrated that analogous optical sensors can be devised to detect important polyions, by doping polymeric films with suitable chromoionophores that cooperatively ion-pair with the target polyion structures.

Another major focus of Professor Meyerhoff's current research efforts is centered on the synthesis, study and application of hydrophobic polymer materials that generate low levels of nitric oxide (NO) via the use of appropriate NO release chemistries incorporated into the polymers. Meyerhoff and his co-workers are examining whether such materials exhibit improved biocompatibility, especially reduced activation and adhesion of platelets to the surfaces of intravascular devices coated with such polymers. In a recent article, published as a special accelerated report in *Analytical Chemistry* (72, 1119-1126(2000)), Professor Meyerhoff and his collaborators demonstrated the utility of employing these new NO release polymers to improve the *in vivo* analytical performance of intravascular oxygen sensors implanted within the blood stream of living animals. Some of these same NO-release polymers are being evaluated as potential coatings for extracorporeal polymer tubing circuits used in coronary bypass surgery, kidney dialysis, etc.

Professor Meyerhoff is on the editorial/advisory board for a number of journals, including *Electroanalysis*, *Analytica Chimica Acta*, *Biosensors and Bioelectronics*, and *Applied Biochemistry and Biotechnology*. He also is an active consultant and member of the scientific advisory boards for Medtronic Perfusion Systems, Instrumentation Laboratory, Selective Technologies Inc., and GDS Technology Inc. In March of 2001, Professor Meyerhoff will become president of the Society for Electroanalytical Chemistry, an international organization dedicated to publicizing advances in the field of electrochemical methods of analysis.

During his 21 years on the faculty, Professor Meyerhoff has taught analytical courses at both the undergraduate and graduate level. Returning from his sabbatical this Fall, he looks forward to teaching one of his favorite graduate courses, *Electroanalytical Methods*, and in the Winter, he will once again touch base with our undergraduate majors (juniors and seniors) by teaching *Physical Methods of Analysis* (aka *Instrumental Analysis*).

## Graduate Student

Laurie Yoder is a researcher in the laboratory of Professor John R. Barker. Her work centers on vibrational energy transfer in highly vibrationally excited molecules in the gas phase and in van der Waals clusters. In collaborative work, she also had the opportunity to travel to the Chemical Dynamics Visitor Laboratory at Sandia National Laboratories in Livermore, California. At Sandia, her work was the first to use the ion imaging technique to resolve the recoil distributions from van der Waals cluster predissociation. In other research, she has used classical trajectory calculations to investigate the relationship between vibrational energy transfer in collisions and in clusters. She has authored and coauthored publications on experimental work in collisional energy transfer, cluster predissociation, and classical trajectory simulations.

She received the Horace H. Rackham School of Graduate Studies Predoctoral Fellowship for the 1999-2000 academic year. In addition, she was a University of Michigan Regents Fellow from 1994 to 1998. In her free time, she enjoys designing and sewing quilts and clothing, and is active in church functions. Her husband, Derek, is also a graduate student in Chemistry.



Mark Meyerhoff



Laurie Yoder



## Undergraduate Student



Suzanne Blum

Suzanne A. Blum excelled in no less than four different areas simultaneously. First, she had an outstanding academic program, including her competitive performance in some of the introductory graduate courses. Second, she participated on a variety of undergraduate research experiences on and off campus (S. Lee, E. Vedejs, and A. Stacy at UC-Berkeley). Third, she has been a leader in our active American Chemical Society student affiliate organization. By the end of her first year at the UM, Suzanne was co-President of the UM American Chemical Society Student Affiliate (ACSSA) chapter. She organized and implemented a number of outreach programs that brought imaginative science activities to college and pre-college students. Finally, Suzanne has worked in the teaching program with Prof. Coppola on curriculum development and educational research projects. Through numerous presentations and workshops at National ACS Meetings, Suzanne's work at the local level attracted the attention of the national ACS organization. Last year, Suzanne was the only undergraduate to be selected to work with the national Student Affiliate Task Force charged with redefining undergraduate programming at the national meetings. In the eyes of the American Chemical Society, Suzanne is a leader among leaders. She has been a leader in the Structured Study Group program in Chemistry 210 and 215, and a laboratory instructor in Chemistry 211. Last summer, based on prior work in chemistry, she nearly single-handedly designed, implemented and evaluated a short-term intervention program in physics for at-risk college students. The Department has recognized Suzanne's achievement since her first year: 1996-97 Sokol Scholar and AXE Outstanding First Year Student Award, 1997-98 Friedley Scholarship, 1999-00 ACS Senior Leadership Award and WISE Award. In 1999 she received the U-M Alumni Leadership Award. Under her leadership, the ACS Affiliates received the National ACS Outstanding Chapter Award (1997-99) and the National ACS Phoenix Award for Community Outreach in 1998. Suzanne will start graduate school at UC-Berkeley with the benefit of a National Science Foundation Graduate Fellowship. We congratulate Suzanne on her accomplishments and thank her for her tireless work as a member of our department for the last four years.

## New Faculty



Zhan Chen

### Zhan Chen

Assistant Professor of Chemistry  
Ph.D., University of California at Berkeley  
Biomaterial and Polymer Surfaces,  
Biocompatibility

I intend to study polymers and biomaterials by using advanced optical techniques, such as sum frequency generation (SFG) vibrational spectroscopy, supplemented by other state of the art techniques including atomic force microscopy (AFM), X-ray photoelectron spectroscopy (XPS), and neutron reflectivity.

SFG is a powerful and versatile in situ surface probe, which not only permits identification of surface molecular species, but also provides information about surface structures. It has already dramatically affected the progress of sur-

face science, a field of great importance to many disciplines ranging from chemistry, physics, and life sciences to engineering including modern electronic technology. In an SFG setup, a pulsed visible laser beam (frequency  $\omega_{vis}$ ) and a tunable pulsed IR laser beam (frequency  $\omega_{ir}$ ) are overlapped on a surface, then the light emitted by the nonlinear process at the sum frequency,  $\omega_{sum} = \omega_{vis} + \omega_{ir}$ , is detected by a sensitive photodetector. Both theoretical calculations and experimental results show that SFG is submonolayer sensitive.

The two projects I will study are the studies of polymer surfaces, and the interactions between biomaterial surfaces and biological molecules at the molecular level. The long-term goal of the first project is to realize the optimal polymer surface properties by manipulating surface structure. The short-term goal is to

detect molecular structure on polymer surfaces, e.g., to understand how molecular weight (MW) and end groups affect polymer surface structure at the molecular level. The long-term goal of the second project is to find correlations between biocompatibility and the surface structure of biomaterials. The short-

### **Eitan Geva**

Assistant Professor of Chemistry  
Ph.D., Hebrew University of Jerusalem  
Theoretical and Computational Chemistry

Understanding dynamics, chemical reactivity and spectroscopy in condensed matter is at the forefront of modern physical chemistry. Recent experimental advances have made it possible to explore dynamics on time scales ranging from femtoseconds to months, and to probe individual molecules embedded deep inside condensed phase hosts (crystals, liquids, glasses, proteins, etc.). The unprecedented level of detail made available by these experiments calls for the refinement and extension of theoretical and computational methodologies. The research in my group focuses on achieving this goal, in the following areas:

(1) Quantum dynamics in condensed phase. Solution phase molecular dynamics often involves classically forbidden processes, such as those in electronic spectroscopy, and electron and proton transfer reactions. We develop and apply computational tools for simulating quantum molecular dynamics in such systems.

### **Anna K. Mapp**

Assistant Professor of Chemistry and Medicinal Chemistry  
Ph.D., University of California, Berkeley  
Organic Chemistry, Chemical Biology,  
New Synthetic Methods

Organic synthesis offers powerful tools for addressing questions of biological importance, and the answers to such questions are often limited by the scope of available synthetic methods. Thus, as we seek to unravel complex biological processes such as eukaryotic gene expres-

term goal is to understand the interactions between biological molecules (such as amino acids, peptides, proteins) and biopolymers at the molecular level in situ. In the future, I would also like to apply SFG to study other surfaces, such as semiconductor or nanoparticle surfaces, and bulk systems like chiral media. In addi-

(2) Single molecule spectroscopy in biosystems. Understanding the conformational dynamics of biomolecules, such as protein folding, is of fundamental and practical importance. It has recently become possible to perform spectroscopic measurements on individual biomolecules, such as proteins, DNA and RNA molecules. Our goal is to quantify the relationship between these measurements and the underlying conformational dynamics. Our approach is based on stochastic models and dynamical simulations of simple model biomolecules.

(3) Dynamical heterogeneity in glasses. Glasses, or amorphous solids, are very common and have many important technological applications (e.g. plastics, optical fibers and ceramic materials). At the same time, glasses are also poorly understood, partly due to their intrinsically heterogeneous nature. This heterogeneity gives rise to a distribution of local dynamical environments whose spectroscopic signature has only recently become experimentally accessible via single molecule spectroscopy. We explore the

relationship between dynamical heterogeneity and spectroscopy by computing spectroscopic response functions from molecular dynamics simulations of glasses.

sion as well as to develop new therapeutics, group efforts will simultaneously focus on the development of new synthetic reactions. An outline of two representative projects follows.

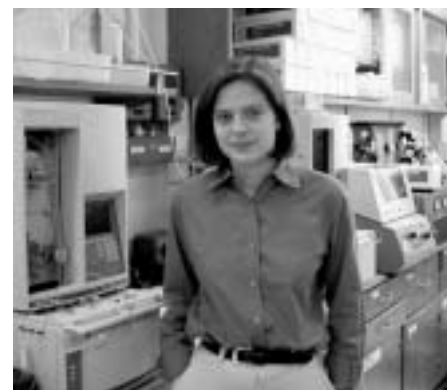
Radical anion/anion cascade reactions. Cascade reactions offer a highly efficient approach for the formation of multiple bonds and complex target molecules. The primary requirement for a successful, widely applicable cascade reaction is selectivity-chemoselectivity, regioselectivity, and stereoselectivity. The

tion, I would like to investigate vibrational dynamics of simple biological molecules (amino acids or peptides) using advanced optical techniques, such as IR pump-probe or IR pump-SFG probe methods. I would examine these biological molecules both in the bulk and on the surface.

relationship between dynamical heterogeneity and spectroscopy by computing spectroscopic response functions from molecular dynamics simulations of glasses.



*Eitan Geva*



*Anna K. Mapp*

one electron reduction of suitably functionalized unsaturated ketones, esters, and amides will provide a powerful entry into cascade reactions which exploit the differential reactivity of radical and anionic intermediates, allowing the formation of multiple carbon-carbon bonds to produce polycyclic structures in a controlled fashion. The scope of the methodology will be defined by total syntheses of the Lycopodium alkaloids paniculatine, magellaninone, and magellanine as well as the antihypertensive alkaloid gambirine. Studies of asymmetric versions of the cascade reaction as well as its applicability to solid-phase organic synthesis will also be initiated.

Artificial transcription factors Regulated gene expression is critical for cellular existence, and a disruption in the regulatory network can result in disease or death. Therefore, a goal of primary importance in the scientific community has been to discover methods of repro-

gramming gene expression in diseased cells while leaving normal cells unaffected. Our understanding of transcription, an early step in gene expression, has now reached a sufficiently sophisticated level to allow us to tackle this challenge from a chemical perspective. Dendritic and polymeric structures designed to functionally mimic the protein participants in activation and repression of transcription will be examined through in vitro assays and cell culture experiments. Organic synthesis will play a critical role in this effort. By varying the synthetic approaches to the artificial transcription factors, their overall function as activators and/or repressors can be controlled and important characteristics such as cell membrane permeability and tissue-type specificity can be addressed. While the long term goal is the development of novel therapeutic agents for diseases such as cancer and diabetes, mechanistic questions surrounding the regulation of gene expression will also be addressed.



*Adam J. Matzger*

**Adam J. Matzger**

Assistant Professor of Chemistry  
Ph.D., University of California-Berkeley  
Organic; Polymers/Organic Materials

Our research program utilizes organic synthesis to make polymers and organized assemblies. Targets are chosen for their potential to have novel properties and methodology development is a critical component of all efforts. Three major research thrusts are:

Conjugated polymers. Cascade radical cyclizations for the production of planarized polythiophenes, polypyrroles, and other heteroatom-containing conjugated polymers will be developed. These materials are expected to have significantly diminished HOMO-LUMO gaps when compared to systems lacking planar structural constraints. The effect of this perturbation on the conductivity and electrooptical properties of these polymers will be explored. Ultimate application in organic light emitting diodes (OLED's) and other devices will be pursued.

Physisorbed monolayers. Highly organized monolayers can be obtained by

the spontaneous self-assembly, under atmospheric conditions, of molecules containing long segments of methylene groups. The imaging of these adsorbates with submolecular resolution is possible with scanning tunneling microscopy (STM) which allows for an exquisitely detailed understanding of their arrangement and constitution. Use of this knowledge in the design of structurally more complex layers should allow control of surface properties (oxidation, corrosion, hydrophobicity, etc.) and correlation of these bulk properties with organization at the molecular level.

Controlling crystal polymorphism. The ability of molecules to crystallize in more than one arrangement in the solid state has serious implications for a variety of applications including nonlinear optical properties, solid state reactivity, and pharmaceutical distribution. We are seeking to understand and control the process of crystallization in a general fashion with the goal of making materials with improved functionality. Combinatorial materials chemistry will play a vital role in these efforts.



# Faculty News

**Brian Coppola** was awarded the Amoco Undergraduate Teaching Award for his inspiring and innovative work in science education. Coppola was selected, by the American Chemical Society, to participate in the Shaping the Preparation of Future Science and Mathematics Faculty program. He continues his work as PI for a Department of Education grant which supports Graduate Students in the Area of National Need (GAANN).

**M. David Curtis**, as co-PI with **Richard Laine**, led the first cohort of graduate students to be funded from the NSF IGERT (Integrative Graduate Education and Research Training) program. In addition, Curtis received funding from NSF for his work on "Controlling Solid State Structures of Conjugated Polymers: Optoelectronic and Transport Effects".

**Billy Joe Evans** was one of five individuals to receive the "Giants in Science" honor from the Ninth Annual National Conference of the Quality Education for Minorities (QEM) in Mathematics, Science and Engineering Network. He was honored for his impact on students and work as a mentor, teacher and researcher. His research interests include the synthesis and structure/property relations in magnetic and electronic materials.

**Gary Glick** received a recent grant from NIH on "Mechanistic Studies of Pro-Apoptotic Benzodiazepines".

**Richard Goldstein** was awarded an NIH grant for "Computational Approaches to Protein Sequence Analysis".

**Nancy Kerner** received the 1999 Excellence in Education Award from the College of LS&A. In addition, she received a University of Michigan award certificate for her innovative achievement in education and for her selection as laureate of the Computerworld Smithsonian Institute. Kerner is the brain-child behind CoLABnet (Collaborative Laboratories Through Networked Computers) project, a project designed to support collaborative team inquiry using networked computers.

**Raoul Kopelman** continued his service as a member of the ACS National

Panel for Annual Physical Chemical Prize. He is the co-organizer of the Materials Research Society Symposium (4 days) on Dynamics in Small Confining Systems, Boston, December 2000. He is the organizer of the Symposium at ACS Pacificchem Meeting, Honolulu, HI, December 2000. He received U.S. Patent #6,002,817, "Optical Sensors for the Detection of Nitric Oxide," R. Kopelman, H. Clark, and S. Barker, issued December 14, 1999.

In May, **Robert Kuczkowski** was a Grand Awards judge at the Intel International Science and Engineering Fair held this year in Detroit. He renewed acquaintances with several alums who also served as judges: Phil Pavlik (Ph.D.-Blinder, '67), Karen Adams (Ph.D.-Rasmussen, '77), Nick Fotinos (Ph.D.-Curtis, '81), Linda Peerey (BSC, '83; Ph.D.-Iowa St., '89) and Charlene (Drumm) Hayden (BS '82, Ph.D.-Morris, '95).

**David Lubman** received NSF funding for "An Instrument for Sequencing of Proteins from 2-D Gels by CE/MS." He also was awarded funding from the National MS Society for "Posttranslational Modification in MBP from MS Myelin". He is actively involved in developing a new liquid-phase protein separation technology that could help scientists solve the proteomics puzzle.

**Neil Marsh** was awarded funding from NIH for his work on "How do enzymes generate and control free radicals?" More importantly, Dr. Marsh was promoted to Associate Professor of Chemistry with tenure.

**Kathleen Nolta** was the recipient of the 2000 Golden Apple Award for Undergraduate Teaching. She is the second faculty member from Chemistry to have received this award (**Coppola**, 1994). Students at the University give this award annually – it is considered one of the University's most prestigious pedagogical honors.

**William Pearson** received the Faculty Recognition Award from the College of LS&A for his research in the development of new methods to synthesize bio-

logically significant molecules. In addition, he was awarded the LS&A Excellence in Education Award. In the research arena, he received funding from NIH to study Alkaloid Synthesis via [3+2] Cycloadditions. He also was awarded a grant to study "Novel Glycosidase Inhibitors as Anticancer Agents."

**Vincent Pecoraro** continued as associate editor of *Inorganic Chemistry* and serves on the editorial advisory board of the *Journal of Biological Inorganic Chemistry*. He also served as the Conference Chair for the 2000 Gordon Conference on Metals in Biology.

After his return from sabbatical, **James Penner-Hahn** returned to campus invigorated and rested. His research in biophysical and physical organic chemistry continues. In addition, he was appointed as an Associate Vice President for Research in the Office of the Vice President for Research effective May, 2000.

**William Roush** received new funding from NIH/NIGMS for research on "Acyclic Diastereoselection: Methodology and Synthesis". He also received the Distinguished Faculty Achievement Award from the University of Michigan as one of the world's leading synthetic organic chemists. He served as the co-chair of the University of Michigan Life Sciences Commission.

**Nils Walter** completed his first year at Michigan. He has begun collaborative efforts to apply biophysical techniques to the analysis of RNA with several faculty at Michigan and Stanford.

The LS&A Excellence in Teaching Award was presented to **Barbara Weathers**. Weathers has been a critical link in the teaching of undergraduates at the entry level.

**Omar Yaghi** received NSF funding for the study of porous metal-organic materials.

**Charles Yocum** was the recipient of the Margaret and Herman Sokol Faculty Award in the Sciences this year. His talk was entitled "Reactivity and Structure of the Photosynthetic Oxygen Evolving Site".

## Symposia/ Seminars

The seminar program was especially busy this year with four active search committees interviewing prospective faculty candidates. Not including student seminars and thesis presentations, there were approximately 80 seminars scheduled during the academic year alone. Since many students and faculty are interested in hearing other talks outside the chemistry department, opportunities to hear many ideas is enormous.

The 39<sup>th</sup> Bachmann Lecture in May was a special event this year. The honoree was Prof. Ryoji Noyori of Nagoya University. He spoke elegantly on his extensive studies of asymmetric hydrogenation, including a second lecture the next day. The event was further distinguished by the attendance of about 25 Bachmann students, collaborators and spouses, and by several Bachmann relatives, who were all recognized by Dr. Marino at the start of the lecture. This special reunion was fostered with the help of several of the alums, especially John Dice and Peter Smith. The annual lecture is supported by

the Bachmann endowment fund and a gift from Parke-Davis.

The 6<sup>th</sup> Michigan Symposium on Contemporary Challenges in Molecular Medicine was held in May, co hosted with Parke-Davis Pharmaceutical Research. It was well attended by several hundred people attracted by the theme: *Biology and Chemistry of Natural Products*. In the morning session, Dale Boger (Scripps Research Inst.) spoke on *Natural Products and Nature's Lessons*, followed by Jon Clardy (Cornell) on *Natural Products and Natural Products Libraries*. In the afternoon the presentations were by Peter Wipf (Pittsburgh), *Cracking the Chirality Code: Total Synthesis vs. ab initio Computations*, and by K. C. Nicolaou (Scripps Research Inst.), *Enabling Technologies for Biology and Medicine Arising from Endeavors in Total Synthesis*. Even a false fire alarm at the start of Nicolaou's talk could not dampen the enthusiasm of the attendees for a very stimulating day.

The Moses Gomberg Seminar series, sponsored by Dow Chemical, and organized by the assistant professors, had a distinguished program of presentations throughout the year. There were four visitors in the fall term, including Ray

Freeman (Cambridge), *NMR – The Chemist's Wand*; JoAnne Stubbe (MIT), *Ribonucleotide Reductases: New Horizons*; Judith Klinman (U.C., Berkeley), *Dual Function Proteins: Cofactor Biogenesis and Catalysis in the Copper Amine Oxidases*; Jacob Schaefer (Washington U.) *REDOR NMR of Biological Solids: From Protein Binding Sites to Bacterial Cell Walls*. In the winter term the speakers were Vern Schramm (A. Einstein Coll. of Med.), *Transition State Analysis and Enzymatic Inhibitor Design*; Douglas Rees (Cal Tech), *Structures and Function of Membrane Proteins*; Harry Noller (U.C., Santa Cruz), *X-Ray Crystal Structure of the Ribosome. Implications for the Mechanism of Translation*.

A vibrant seminar program is considered essential to our mission to stimulate intellectual growth and breadth, and to foster research and collaborations at the frontier of modern science. The many lectures are supported by a variety of sources, but the major contributions come from gifts and endowment funds. Gifts to the Alumni Fund are used in part for this important activity. We are grateful to all our many supporters, both large and small, to this key component of the department's program.

## Reunion of Professor Werner E. Bachmann Students and Associates

Twenty one former students and post-doctoral associates of Werner Bachmann met in Ann Arbor on May 1 and 2, 2000. Considering that all of the attendees had received their PhD degrees before 1952 (one had received his degree as early as 1937), it was a remarkable turnout. The number attending the meeting reflected the strong group spirit of his students who always referred to Bachmann as "The

Chief". The timing of the gathering was appropriately held during the annual Werner Bachmann Memorial Lecture.

As part of the meeting, former students were asked to provide a short summary of their professional careers. The resulting collection made fascinating reading. Bachmann's colleagues were involved in everything from academia (including a college provost and a couple of deans) to working in industry at research positions or supervising the production of tonnage quantities of plastics. One of the participants wrote, "Working for The Chief was a great way to begin a career in Chemistry".

Of the approximately 55 students and post-doctoral associates of Werner Bachmann, 41 are believed to be still living and more than half made it to Ann Arbor. Several others wished to attend but, mostly for medical reasons, were unable to do so. Remarkably, three members of the group, all over 80 years old, are still actively engaged in laboratory work. The daughter of Werner and Marie Bachmann, Joan Bachmann Johnston-Stern and her husband were a welcome addition to the group.

## Gomberg Celebration

In June 2000, we celebrated the 100th anniversary of Moses Gomberg's seminal discoveries and publications on triphenylmethyl with "Gomberg 2000: A Century of Organic Free Radical Chemistry." The conference featured all aspects of organic radicals, mechanism and theory,

synthesis, free radicals in biology, and polymers.

The meeting, organized by the International Society for Organic Free Radicals (ISOFR), was held at the University of Michigan campus in Ann Arbor, June 25

- 29, 2000. Plenary sessions featured lectures and parallel sessions featured one Keynote Lecture and discussion followed by thirty-minute contributed talks. Attendees participated in poster sessions and informal discussions.



## Gomberg National Historic Landmark Ceremony

The conference began with the “Gomberg Historical Landmark Ceremony”, followed by a plenary session on Gomberg and his chemistry. The highlight of the evening was the presentation of a National Historic Chemical Landmark Award to the University of Michigan by the American Chemical Society for “The Discovery of Organic Free Radicals by Moses Gomberg.” This prestigious award symbolizes the impact of research in free radicals over the last century on science and society.



*Daryle Busch-ACS President and Prof. J. Michael McBride, presenting the ACS National Historic Chemical Landmark Award to Prof. Joseph Marino*

## Moses Gomberg: Anniversary

As many of you know by now, the year 2000 marks the 100th anniversary of the announcement by Moses Gomberg of a new compound containing carbon in the trivalent state. The Chemistry Department marked the occasion by hosting a meeting organized by the International Society for Organic Free Radicals (ISOFR) on June 25-29 entitled “Gomberg 2000: A Century of Organic Free Radical Chemistry”. The conference featured all aspects of organic radicals: mechanism and theory, synthesis, free radicals in biology, and free radicals in polymers.

Moses Gomberg was an intensely private and self effacing man and much of his early life is unknown. He was born February 8, 1866, in the small town of Elizavetsgrad in the Ukraine. In the twentieth century, some time after the death of Tsar Alexander II, the town was renamed Kirovograd, the name it now bears. His parents were Gersko (George) and Mariam-Ethel Resnikovoi Gomberg. His father was a merchant in the town. Moses had two siblings, a brother, Isoskher, born a couple of years later, and a sister, Sophia, who came to America to join Moses and lived with him throughout his life. The fate of his brother is unknown since no mention has been found of him.

As a child, Moses Gomberg attended the boys classical gymnasium in Elizavetsgrad and early displayed an aptitude for academic studies. In grades 1 through 3, he consistently attained high grades and his name was always number one, or the only one, on the class honor wall. As a child of a poor family, he was usually excused from paying tuition. The academic reports given probably correspond to what, in America, would be junior high and high school since some of the subjects listed include French, German, geography, arithmetic and drawing. In the 4th grade he was demoted to a second ranking for acting in an impudent way when the list of students excused from paying tuition was announced, and for using rude expressions in a composition he gave his teacher. It is surmised that he finished, or had nearly finished, his 6th grade class when he left for America.

In 1884 or shortly thereafter, Gomberg’s father was forced to flee Russia, accused of political conspiracy and, probably, for being a member of the “Narodnaia Volia” society, an anti-Tsarist organization which was active at the time. At the age of eighteen Moses followed soon after, although it is not known whether he also was a member of the society, or whether he was just subject to “guilt by association”. In any event, the two emigrated to the United States and made their way to Chicago. There they were joined somewhat later, by Gomberg’s mother and by his sister, Sophia. The family, isolated and speaking little or no English, lived a hand to mouth existence, the men taking what jobs they could find. Gomberg worked for a time in the Chicago stockyards where the work was dirty and degrading. Alfred H. White, in his review of Gomberg’s life, notes that he confided to him once that he could personally attest that many of the scenes in Upton Sinclair’s book, “The Jungle” were true. The ultimate fate of Gomberg’s parents in Chicago is unknown.



*Moses Gomberg in the laboratory about 1935*



*Moses Gomberg as a first year graduate student in 1890*

Moses worked hard, learned English, and was able to complete his high school education, although it is unknown whether he attended school or studied by himself. When it came time to further his education, he debated the choice between the Universities of Illinois and Michigan. The decision, it is said, in favor of Michigan was made because he had heard that Michigan paid their student janitors more. He matriculated in 1886 and the story is often told of how he wished to enroll in the beginning physics course but was rejected by Professor Carhart because he had no background in trigonometry. He reappeared in Carhart's office three days later with the same request and got the same answer. He then protested that he had studied trigonometry and when Carhart quizzed him, he was amazed to find that he was able to answer all his questions.



*Boy's classical gymnasium in Elizavetsgrad, Russia, where Gomberg was a student in the 1880's. It has now been converted to an officer's club.*

Gomberg graduated with a BS degree in 1890 and was invited by Professor Prescott to continue in graduate school. He was awarded an assistantship to provide financial support and also earned additional funds by carrying out analyses for commercial firms on a wide variety of samples. This work, plus his training with Professor Prescott whose basic expertise was as an analytical chemist, impressed on him the value of careful analysis. He was awarded the MS degree in 1892 and the PhD degree in 1894. In 1893 he was appointed to an instructorship and, after receiving his PhD degree, he joined the faculty, of which he remained a member for some forty-three years. Sometime in the 1890's, his sister joined him in Ann Arbor to keep house for him. She served as one of the two required witnesses when Gomberg appeared in the court in Washtenaw

County to complete the naturalization process. She had been naturalized some time previously.

Gomberg's only extended absence from Michigan came in 1896-7 when he took a leave to study in Europe. His stay in Europe was extraordinarily productive. In Munich, he spent two terms in Baeyer's laboratory and in Heidelberg, one term with Victor Meyer. The paper arising from his work in Munich on derivatives of butyric acid reports more results than might be expected from his limited time there, but the work in Heidelberg set the stage for much of his research in subsequent years. He proposed to synthesize tetraphenyl methane, a synthesis which Victor Meyer himself had attempted without success. Meyer had come to the conclusion the compound was inherently unstable for steric reasons. Despite discouragement by Meyer, Gomberg persisted and, using a new synthetic route, was able to isolate three tenths of a gram of a compound that had the desired properties and gave the correct analysis. It should be noted that this research was done in the days before microanalysis was established and when customary samples for analysis were in the vicinity of 0.2 gm. or more, practically his whole yield. Upon his return to America, he had a student repeat his work and confirm his results.

Encouraged by his tetraphenylmethane experiments, Gomberg then set out in pursuit of hexaphenylethane. The story of this research has often been told and will not be repeated here. Suffice it to say that Gomberg was successful in preparing a small amount of a very reactive compound whose properties forced him to the conclusion that it was triphenylcarbon. Subsequent work confirmed his hypothesis and a new era in chemistry was born.

During his life, Gomberg received a number of honors from the Chemical and Academic Communities. He became a member of the National Academy of Science in 1914 and was a honorary member of the Netherlands Chemical Society. He was awarded the Nichols Medal in 1914, the Willard Gibbs Medal in 1925 and the Chandler Medal in 1927. In 1931 he was President of the American Chemical Society. Honorary Doctor of Science degrees were bestowed on him by the University of Chicago and the Polytechnic Institute of Brooklyn, and the degree of Doctor of Laws was awarded him by Michigan in 1937.

Although Gomberg had planned to travel and visit colleagues abroad after retirement, his sister's failing health prevented that and he spent his remaining years taking care of her. He died in Ann Arbor on February 12, 1947.

Robert C. Taylor



*Moses Gomberg with some of his students in 1915. Chester S. Schoepfle, second from the right, succeeded Gomberg as Chairman of the Department in 1936.*

# Graduate Program News

The Fall 2000 class will include 46 students from all over the United States and the world. These new students will join the current cohort of 167 Ph.D. candidates in Chemistry. With four new faculty joining the department, the exciting research and inspiring youth is sure to invigorate and rejuvenate the entire department.

## New Program - IGERT

The Department completed its first year of the NSF Integrated Graduate Education Research and Training Fellowship program in the area of Molecularly Designed Electronic, Photonic, and Nanostructured Materials. This fellowship provides funding for students at the University in areas including Chemistry, Materials Science and Engineering, Electrical Engineering, and Applied Physics.

The IGERT training program is a new initiative funded by NSF to enhance and broaden graduate education. Students entering the Ph.D. training program will receive a 2 year fellowship to complete an interdisciplinary sequence of courses especially directed to their research interests, and 3, one term research projects under different mentors.



*Matthew Hartman*

## Annual Awards

During the annual awards ceremony, a number of outstanding students were recognized for their research, teaching, and academic achievements.

### Outstanding Graduate Student Instructor Award

Awarded to graduate students who taught undergraduate courses in Chemistry during the 1999-2000 academic year. Winners are chosen based on their contribution to innovation in the lab or classroom, teaching evaluations, and written recommendation of faculty supervisor.

1999-2000 Award Winners were: **Matthew Hartman** (Coward), **Patrick Stoy** (Pearson), and **Nathan Ockwig** (Yaghi).



*Prof. Dimitri Coucouvanis and  
Nathan Ockwig*

### Outstanding Graduate Student Research Award

Awarded to graduate students based on research advisor recommendation, publications, posters, meeting presentations, uniqueness and nature of research.

**Theresa Reineke** (Yaghi) The focus of her dissertation research project was aimed at developing the design of luminescent metal-organic networks. Her work has been published in *J. Am. Chem. Soc.* and *Angew. Chem.* She has shown the scientific community that highly interpenetrating molecular structures can be designed to be highly porous.

**Bathsheba Chong** (Lubman) The focus of her research has involved new methods for rapidly screening changes in the proteome of a cell. She has been involved in developing liquid chromatographic separations of cellular proteins for rapidly monitoring changes in cells. She has a broad range of skills in mass spectroscopy, separations, and protein chemistry. She can presently separate several hundred proteins in under an hour.



*Theresa Reineke*



## 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 graduate student.

The 1999-2000 award winner was **Rebecca Peebles** (Kuczkowski).

In Rebecca Peebles' research, she has impressively merged spectroscopy and theoretical calculations to understand a series of weakly bonded van der Waals complexes. Her research has been characterized as "an outstanding job of extending microwave spectroscopy in the study of weakly bound systems... research that goes beyond the usual levels of quantity, quality and originality." She has held several departmental fellowships and was recently awarded a NRC-NIST postdoctoral fellowship at the University of Colorado.



*Tincuta Veriotti and Prof. Milton Tamres*

## Milton Tamres Outstanding Teaching Award

This award is given by one of our emeritus faculty, Professor Milton Tamres. Professor Tamres wishes to recognize outstanding cumulative teaching service.

The winner for 1999-2000 was **Tincuta Veriotti** (Sacks).

Tincuta has taught chemistry courses for several years. She has taught both Chemistry 125 and Chemistry 242. She received excellent evaluations with comments like "excellent lab instructor, awesome instructor, one of the best GSIs I have ever had at the University of Michigan". In addition to teaching courses, Ms. Veriotti has taught for the WISE (women in science education, see page 16) where she has had a most positive influence on younger girls. In addition, Tincuta has acted as a graduate student mentor to incoming Ph.D. students.



*Stacey Nevins*

## The Bob and Carolyn Buzzard Leadership Award

The leadership award is given to a graduate student who has shown the skills of a leader of many. This award is sponsored by Bob and Carolyn Buzzard, friends of the Department. The person selected for this award takes an active role in the Department – assisting with graduate recruitment; working with faculty and staff to provide a better environment for graduate students; also serves as morale and welfare support person. The 1999-2000 winner was **Stacey Nevins** (Meyerhoff)

The Department offered three new awards this year to recognize outstanding achievement by a first, second, and third year student.

*Outstanding First Year Graduate Student Award* was presented to **Scott Shaw** (Vedejs). Scott has a 9.0 GPA (A+) and has completed the cumulative exam requirement for organic students. He is well along the path of defining his research problem and is in the early stages of laboratory work. We look forward to interesting things coming from Scott in the years to come.

*Outstanding Second Year Graduate Student award* was presented to **Katherine Henzler** (Ramamoorthy)

She has completed a project on "protein conformational transitions in solid-state" resulting in the submission of a paper to J. Am. Chem. Soc. She has started working on the structure, dynamics and function of a human-antibiotic peptide (LL-37) in membrane environments and was involved in writing, "Solid-State NMR Spectrometer Manual for Dummies".



*Prof. Dimitri Coucouvanis and Katherine Henzler*

*Outstanding Third Year Graduate Student award was given to **Kenneth Nicholson** (Banaszak Holl)*

Ken is completing his third year at Michigan. He has taught in Chemistry 130 and 463 and has acted as a graduate student mentor, leading the way for future instructors in Chemistry. In the research arena, he has three publications with one more submitted and another on the way. His research discoveries include a rare direct proof of a cluster monolayer covalently bonded to a metal surface. Ken has mastered the special infrared beamline at the National Synchrotron Light Source. He has also discovered an interesting precursor reaction behavior generally observed for simple molecules such as H<sub>2</sub> and CO.



*Prof Dimitri Coucouvanis and Ken Nicholson*



*Dustin Mergott and Scott Shaw  
enjoy the goodies*

## Graduate Student Fellowship Recipients

### American Chemical Society Fellowship

Glenn Micalizio (Roush)

### Biophysics Training Grant

Kevin Hallock (Ramamoorthy)  
Marja Huhta (Marsh)  
Sarah Ingalls (Goldstein)  
Stephanie Mann (Penner-Hahn)

### Chemistry-Biology Interface Training Program Fellows

Training Grant provided by National Institutes of General Medical Sciences for research at the interface of chemistry and biology.

Kirk Hering  
Beth Knapp  
Nicholas Knuth  
Jennifer Pickett  
Jeremiah Powers

### Dow Britton Fellows

Fellowship support from Dow Britton.  
Matthew Hartman (Coward) (Spring/Summer '00)  
Steve Poon (Mapp) (Spring '00)

### General Electric Fellowship

Joslyn Yudenfreund (Pecoraro)

### Graduate Degrees for Minorities in Eng. & Science (GEM)

Competitive fellowship support for students from historically underrepresented groups.

Dinari Harris (Walter)

### Graduate Assistants in the Area of National Need Fellows

Enhance teaching and research capacities to increase level of chemists to meet the needs of emerging industries vital to our technological competitiveness and to supply our colleges with faculty to meet the 21<sup>st</sup> Century teaching and research missions.

Kristen Balchus (Fierke)  
Andrew Callender (Meyerhoff)  
Christian Casper (Coucouvanis)  
Jennifer Fattore  
Megan Frost (Meyerhoff)  
Megan McGuigan (Sacks)  
Benjamin Reynolds (Yaghi)

### Hughes Predoctoral Fellow

Prestigious and highly competitive national fellowship sponsored by the Hughes Foundation.

Katherine Henzler (Ramamoorthy)

### *Graduate Fellowships continued*

#### IGERT Fellowships

Training Grant sponsored by the National Science Foundation for research in materials chemistry.

Mark Biscotto (Banaszak Holl)  
Chad Brick  
David Johnson (Fall only, Rasmussen)  
Amy Koren (Curtis)  
Thomas Krebsbach  
Gregory Less  
Anderson Marsh (Gland)  
Kevin Schneider

#### Kodak Fellowship

Aaron Aponick (Pearson)

#### Medical Scientist Training Program Fellows

Fellowship support through the Medical School for students pursuing a dual Ph.D.-M.D. degree designed to prepare an individual for a career in biomedical science and/or medical practice.

Jeffrey Bednarski (Glick)  
Neal Blatt (Glick)

#### National Science Foundation Fellowship

Zuzanna Cygan (Banaszak Holl)

#### Pharmacology Training Grant

Jason Newcom (Roush)

#### Rackham Merit Fellows

Fellowship supported funded by the Rackham Graduate School for students from historically underrepresented groups.

Murphy Brasuel (Kopelman)  
Jason Brown (Curtis)

#### Rackham One Term Dissertation Fellows

Competitive award from the Rackham Graduate School for one term dissertation support.

Carrie Coutant (Sacks)  
Katrina Peariso (Penner-Hahn)

#### Rackham Predoctoral Fellow 2000-01

Competitive fellowships awarded by the Graduate School for doctoral students who have achieved candidacy and are near completion of their degree.

Glenn Micalizio (Roush)

#### Regents' Fellows

Fellowship support for students provided by the Regents of the University.

Jeffrey Bartolin (Banaszak Holl)  
Jeffrey Bednarski (Glick)  
Matthew Hartman (Coward)  
Scott Shaw (Vedejs)  
Morris Slutsky (Marsh)  
Ryan Sweeder (Banaszak Holl)  
Craig Vanderkooi (Zuiderweg)  
Nissa Westerberg (Fierke)  
Neal Yakelis (Roush)

#### Schalon Fellows

Fellowship provided by Edward I Schalon.

Kimberley O'Neil (Lubman)  
Lloyd Simons (Roush)

#### Sokol Graduate Fellows

Fellowship support provided by Herman and Margaret Sokol.

Sridhar Narayan (Roush)  
Rebecca Peebles (Kuczkowski)

## Doctoral Degrees

### August, December, 1999 and May, 2000

#### **Neil Anderson** (Sension)

Ultrafast Polyene Reaction and Relaxation Dynamics in Solution: 1,3,5 Hexatriene, 1,3- Cyclohexadiene, and 7-Dehydrocholesterol. *Dr. Anderson is a postdoctoral researcher at Emory University.*

#### **Shaohua Chen** (Meyerhoff)

Study of Porphyrin-Silica Stationary Phases for Liquid Chromatography. *Dr. Chen is a research chemist at Merck in New Jersey.*

#### **Yajuan Chen** (Lubman)

Analysis and Identification of Proteins from Human Cells using Mass Spectrometry combined with Liquid Chromatography, Electrophoresis, and Database Searching. *Dr. Chen is a postdoctoral researcher at University of California, San Francisco.*

#### **Alexander Chimbayo** (Barker)

Collisional V-T Energy Transfer: Thermal Lensing Experiments and Semiclassical Model Calculations. *Dr. Chimbayo is a research scientist.*



**Ting-Lan Chiu** (Goldstein)

Optimizing Potentials for Protein Structure Prediction, Inverse Protein Folding and Protein Folding. *Dr. Chiu is a postdoctoral researcher at the Donald Danforth Plant Science Center in St. Louis, MO.*

**Heather Clark** (Kopelman)

Optical Nanosensors for Chemical Analysis Inside Living Cells. *Dr. Clark is a research assistant at the University of Connecticut Health Center, Farmington, in the Department of Physiology.*

**Roger Clark** (Pearson)

Synthesis of Diverse Pyrrolidines: (1) 2-Azaallyl Anion and Azomethine Ylide Cycloadditions on Solid Support and (2) Generation and Cycloaddition of Nonstabilized N-Unsubstituted Azomethine Ylide. *Dr. Clark is a researcher at Bayer Corporation in West Haven, CT.*

**Steven Clarke** (Francis)

Supercritical Inert Gas Matrix Isolation Spectroscopy of Fullerenes and other Model Compounds. *Dr. Clarke is a postdoctoral researcher at the University of Colorado.*

**Joan Esson** (Meyerhoff)

Fundamental and Applied Studies of Polyion-Sensitive Membrane Electrodes. *Dr. Esson completed postdoctoral research at Penn State University. She will begin a faculty teaching position at Kalamazoo College.*

**Aaron Gabelnick** (Gland)

Catalytic Oxidation of C3 Hydrocarbons: *In Situ* Mechanistic Studies on Platinum & Supported Platinum Surface. *Dr. Gabelnick is a research chemist at Midland Dow.*

**Joseph Gardner** (Marino)

Two new Chiral, Non-Racemic Sulfoxide Containing 1,3 Amino-Alcohol Synthons: Application to the Total Synthesis of (+)-Negamycin. *Dr. Gardner is a researcher at National Starch in New Jersey.*

**Andrew Grall** (Sacks)

High-Speed Analysis of Organic Vapors Using Vacuum-Outlet Gas Chromatography with Atmospheric-Pressure Air as Carrier Gas and Programmable Column Selectivity.

**Peiqing Huang** (Lubman)

Development of Capillary Separations with Mass Spectrometry for Protein and Peptide Analysis. *Dr. Huang is a researcher at Bristol-Myers Squibb in Syracuse.*

**David Johnson** (Rasmussen)

The Monomer and Polymer Chemistry of 4,5-Dicyano-2-vinylimidazoles. *Dr. Johnson is a postdoctoral researcher at the University of Texas, Austin.*

**Lin Liu** (Lubman)

Development of Capillary Electrophoresis and Mass Spectrometry Methods in Protein Analysis. *Dr. Liu is a research chemist at Abbott Laboratories in Illinois.*

**Yuan Mi** (Pearson)

The Reactions of (2-Azaallyl) Stannanes I. An Approach to the Kopsia Alkaloid (n) -Lapidilectine B Via A 2-Azaallyl Anion Cycloaddition. II. Synthesis Heterocycles Via Azomethine Ylide cycloadditions. *Dr. Mi is a postdoctoral researcher at Harvard University.*

**Kelly Mowery** (Meyerhoff)

The Development and Characterization of Thromboresistant Nitric Oxide Releasing Polymeric Films. *Dr. Mowery completed a one year faculty teaching position at Kutztown State University in Pennsylvania. She is now at home with her newborn child.*

**Mark Mowery** (Evans, C.)

Interfacial Design with Polydiacetylene Monolayers. *Dr. Mowery is a senior research chemist at Merck in West Point, PA.*

**Moira Ringo** (Evans, C.)

Pressure Effects on Complexation Equilibria as Elucidated by Liquid Chromatography. *Dr. Ringo is a research chemist at Glaxco Wellcome in North Carolina.*

**Maria Rubio** (Marino)

New Methodology for the Asymmetric Synthesis of the Aspidosperma Alkaloids. *Dr. Rubio is a postdoctoral researcher at Sloan Kettering Research Institute.*

**Jeffrey Schweinefus** (Morris)

Imaging and Dynamic Studies of DNA During Capillary Electrophoresis: Implications for Biopolymer Electrophoretic Resolution. *Dr. Schweinefus is a postdoctoral researcher at the University of Minnesota in Biochemistry.*

**Erich Steinle** (Meyerhoff)

Potentiometric and Spectroscopic Studies of Metalloporphyrin-Based Polymer Membranes. *Dr. Steinle is a postdoctoral researcher at the University of Florida.*

**Deepika Tandon** (Toogood)

Protein Synthesis Inhibition by Didemnin B : Mechanistic insights. *Dr. Tandon is a postdoctoral researcher at the University of Michigan Medical School.*

**Jerilyn Timlin (Pezzuti)** (Morris)

Bone Microstructure: A Raman Spectroscopic Imaging Study of Chemical and Mechanical Variation. *Dr. Timlin is a postdoctoral researcher at Sandia National Labs in Albuquerque, NM.*

**Shau-Chun Wang** (Morris)

Electro-separations in Thermal Plastic Micro-Fabricated Channels. Fluorescence Detection Strategies and Effects of Electrosmosis. *Dr. Wang is a postdoctoral researcher at Warner-Lambert.*

**Millicent Weldon** (Morris)

Development of Surface Enhanced Raman Spectroscopic Silicon Substrate Microprobes for the Investigation of Subcutaneous Lipid Chemistry. *Dr. Weldon is a researcher at Johnson & Johnson in New Jersey.*

**Chunxin Zhang** (Laine)

Synthesis and Characterization of Octasilasesquioxane Based Molecular Composite Precursors with Potential Applications as Dental Restoratives. *Dr. Zhang is a postdoctoral researcher at the University of Michigan in Internal Medicine.*

**James Zimmerman** (Sacks)

Low-Lying Collective Excitations in  $18_{F(g.s.)}$  and  $18_{Fm}$  Studied Via Intermediate-Energy Coulomb Excitation. *Assistant Professor, University of Wisconsin-Marquette.*

# Undergraduate Program News

## ACS Student Affiliates

The ACS Student Affiliates have been collaborating with area schools and campus groups, focusing on smaller, hands-on outreach activities. They have done demonstrations for the Clague Middle School girls' science club, the University's Women in Science and Engineering (WISE) program, and the campus-wide Kids-Fair event. Laboratory notebook sales have facilitated the outreach programs by decreasing the time spent on publicity and other fundraising.

The group is continuing to thrive, and adding a large number of first- and second-year members. During the next year, they hope to continue to develop their outreach program by building on focused science themes, and continuing to make contacts with area schools through parents, teachers, and institutions like the Ann Arbor Hands-On Museum.



*Margaret and Herman Sokol Scholars (left to right) Darren King, Faith Boman, Rachel Horowitz, Nicole Tuttle, Sarah Uhler. (Not present) Priya Gopwani, Gwendolyn Jacobs, Paul Pagano.*

The 2000-2001 Officers are: Co-Presidents - Jennifer Chang and Benjamin Singer; Vice President - Nicole Tuttle; Treasurer - Peter Apel; Secretary/Historian - Meredith Miller.

Website

<http://www.lsa.umich.edu/~acssa/>

Here are some highlights from the past year's events:

- National Chemistry Week, done jointly with AXE, featured demonstrations on the Diag. This year they included polymer demonstrations, make-your-own slime, zinc- and brass-plated pennies, liquid nitrogen ice cream, and oscillating reaction demonstrations, among others.
- Four members presented a poster on the Kidscience summer outreach series at the spring ACS National Meeting in San Francisco. The poster emphasized the benefits of long-term involvement with the same students and of having the students keep records in laboratory notebooks.
- The chapter was given an Outstanding Student Affiliates Chapter Award for 1998-99 at the ACS National Meeting.

## Undergraduate Horizons

Our chemistry and biochemistry graduates pursue various career paths: graduate school in various areas, medical school, MD/PhD programs, industrial internships, public health, and employment in industry are a few examples. Some of this year's graduates are highlighted below. For 1999-2000 chemistry degrees totaled twenty six, biochemistry had fifty, with seven students concentrating in both programs.

## Undergraduate Awards

The undergraduate awards ceremony in April 2000 was celebrated at Rackham Assembly Hall. The guest speaker was Professor Rob Vander Voo, Director of the Honors Program and Professor of Geological Sciences in the College of Literature Science and the Arts. Professor Vander Voo spoke about how important mentoring is for research students. Another guest of honor was Professor Wilbur Bigelow, benefactor of the Carlene Friedley Scholarship, which is given in memory of his wife, Alyce Carlene Friedlley.



*First Year Awards (front left to right) Nancy Duncan, Suzanne Gothard, Sarah Uhler (back left to right) Brody Flanagan, Paul Albertus, Prof. Brian Coppola, Andrew Weiss*

## Graduation 2000!



*2000 GRADUATION RECEPTION (1 to r front row) Melike Bayram, Lawrence Li, Laura Houry, Rebecca Ihrle, Kendra Frederick (1 to r row 2) Eugenia Njolito, Michael Tseng, Erika Wong, Jessica Kelley, Marieke Gilmartin, Shirley Lee, Laura Harley, Jennifer Stahl (1 to r row 3) Aaron Conant, Soumya Chakravarty, Jason Kieltyka, Ryan Brady, Julie Wellnitz (1 to r row 4) Ann Chopp, Ryan Owen, David Somand, Owen Stark, Christopher McGinley, Andrew Waltman, Christopher Goretski, Jeffrey McMahon, Nicholas Keppeler (for reprints of this photo email cbmoody@umich.edu)*



*Scholarships (front left to right) Desiree Thayer, Jennifer Chang, Eric Hyun, Albert Chao (back left to right) Ian Stewart, Prof. Joseph Marino, Chad Stasik*



*Summer Research Fellowships (front left to right) Albert Chao, Scott Harrison, Elena Garcia, Ross Smith, Darlene Johnson (back left to right) Lecia Harmer, Jonathan Perry, Zain Bengali, Ian Stewart, Samantha Tarras, Eric Hyun.*



## Award Recipients



*Upperclass Awards (front left to right) Hongmei Ge, Scott Harrison, Laura Harley, Eric Hyun, Eugenia Njolito (back left to right) Prof. Rob Vander Voo, Nicholas Keppeler, Christopher McGinley, Prof. Joseph Marino, Andrew Waltman, Roberto Iaderosa.*



*ACS Leadership Award (left to right) Prof. Brian Coppola, Suzanne Blum, Prof. Neil Marsh*



*Carlene Friedley Scholarship (left to right) Jennifer Chang, Prof. Wilbur Bigelow, Meredith Miller, Samantha Tarras (Not Present) Angkana Roy*



*S.N. Ege WISE Award (left to right) Dr. Cinda Sue Davis, Rebecca Ihrle, Suzanne Blum, Prof. Seyhan Ege*



*AXE Outstanding First Year Award (left to right) Prof. Brian Coppola, Nicole Tuttle*

# Undergraduate Awards and Sponsors – 2000

## **1999-2000 Margaret and Herman Sokol Scholarships**

Faith Boman, Priya Gopwani, Rachel Horowitz, Gwendolyn Jacobs, Darren King, Paul Pagano, Nicole Tuttle, Sarah Uhler

## **CRC Outstanding Freshman Achievement Awards**

Andrew Weiss

## **First Year Chemistry Achievement Awards**

Paul Albertus, Nancy Duncan, Brody Flanagan, Suzanne Gothard, Sarah Uhler

## **AXE Outstanding First Year**

Nicole Tuttle

## **Summer Research Funding**

Abbott Labs  
Amoco Foundation  
Pfizer, Inc.  
James E. Harris Fellowship  
James E. Harris Fellowship  
ACS Moisson Fellowship.  
Amoco Foundation  
Pharmacia & Upjohn Fdn.  
PPG Industries  
Moses Gomberg  
James E. Harris Fellowship  
Pharmacia & Upjohn Fdn.  
Alumni Fellowship  
Moses Gomberg

Michael Asuncion (Laine)  
Zain Bengali (Fierke)  
Albert Chao (Koreeda)  
Elena Garcia (Penner-Hahn)  
Lecia Harmer (Koreeda)  
Scott Harrison (Coward)  
Scott Harrison (Coward)  
Eric Hyun (Marsh)  
Jonathan Perry (Koreeda)  
Ross Smith (Pearson)  
Jungsan Sohn (Fierke)  
Ian Stewart (Coppola)  
Nicole Tuttle (Vedejs)  
Andrew Weiss (Vedejs)

## **Outstanding Second Year Student**

Ross Smith

## **Honors College Vanko Award**

Nicholas Keppeler

## **Carlene Friedley Scholarship**

Jennifer Chang, Meredith Miller, Angkana Roy, Samantha Tarras

## **Lubrizol Scholarship**

Ian Stewart

## **National Starch Scholarship**

Albert Chao, Chad Stasik, Desiree Thayer

## **Dow Elanco Award**

Eric Hyun

## **ACS Analytical Chemistry Award**

Scott Harrison

## **Merck Index**

Hongmei Ge, Laura Harley, Roberto Iaderosa, Shirley Lee, Eugenia Njolito, Andrew Waltman

## **ACS Outstanding Senior Leadership Award**

Suzanne Blum

## **S.N. Ege WISE Award**

Suzanne Blum, Rebecca Ihrle

## **AIC Chemistry Award**

Christopher McGinley

## **AIC Biochemistry Award**

Melike Bayram

## Research Experiences for Undergraduates (REU) Program Summer 2000

The National Science Foundation makes opportunities for undergraduates to join research projects each summer. This allows students to experience first-hand how basic research is carried out. The principal support by NSF of such activities is through the Research Experiences for Undergraduates Program. The Research Experiences for Undergraduates (REU) program supports active participation by undergraduate students in chemistry research. REU projects involve students in

meaningful ways in ongoing research programs or proposals.

REU opportunities are an excellent way to reach into the student talent pool. REU projects are strongly encouraged to involve the participation in research of women, underrepresented minorities, persons with disabilities and, students from institutions where research programs may be limited.

The Department of Chemistry provides abundant opportunities where individuals may in tandem assume responsibilities as researchers, educators, and students engaged in joint efforts that instill education with the excitement of discovery through a range of learning perspectives. Progress of responsive relationships is important to the learning opportunity. Dr. Brian P. Coppola coordinates the Department's REU Program, which ran from June 7 - August 16, 2000.

This year the sponsored student affiliates for REU were:

*Elaine Braithwaite* from Southern Utah University (Professor Vincent Pecoraro)  
*Tim Clark* from the University of San Diego (Professor Edwin Vedejs)  
*Amanda Freier* from the University of Indianapolis (Professor Neil Marsh)  
*Adam Goldberg* from the University of Michigan (Professor Brian P. Coppola)  
*Nzingha Harris* from Florida A&M University (Professor Vincent Pecoraro)  
*Kevin Jane* from Indiana Wesleyan University (Professor James Coward)  
*Lynne Kalmbach* from Eastern Michigan University (Professor Richard Sacks)  
*Colleen Nathan* from the Rensselaer Polytechnic Institute (Professor Robert Kuczkowski)  
*Sam Pazicni* from Washington Jefferson College (Professor Larry Beck)  
*Christopher Szakal* from Muhlenberg College (Professor Richard Sacks)



*Rebecca Peebles, Margaret Sokol, and Sridhar Narayan*



*Margaret Sokol and Prof. Charles Yocum*

### Sokol Visit

On April 12, 2000, the Department hosted a tea for our honored guest, Mrs. Margaret Sokol. All past awardees and current awardees were invited to this gourmet feast of tea sandwiches, truffles, fruit and cheese. The yearly visit by Mrs. Sokol is an opportunity to visit with recipients of

the Margaret and Herman Sokol Fellowship. The Department selects two graduate student fellows and eight undergraduate incoming freshmen fellows. The 1999-2000 undergraduate fellows were: Faith Boman, Priya Gopwani, Rachel Horowitz, Gwendolyn Jacobs, Darren King, Paul Pagano, Nicole Tuttle and Sarah Uhler. The 1999-2000 graduate student fellows were Sridhar Narayan and Rebecca Peebles.



(back, l to r) *Gwendolyn Jacobs, Kendra Frederick, Paul Pagano, Darren King, Sarah Uhler, Faith Bowman, Nichole Tuttle.* (front, l to r) *Suzanne Blum, Margaret Sokol, Joseph Wachler*

In addition, the Rackham Graduate School selects a faculty member from the sciences to receive a Margaret and Herman Sokol Faculty Award in the Sciences. Professor Charles F. Yocum, the Alfred S. Sussman Collegiate Professor of Biology and Professor of Chemistry, received this award on April 11, 2000. He discussed "Reactivity and Structure of the Photosynthetic Oxygen Evolving Site" which was followed by a reception in the Rackham Amphitheater.



# Bachelors Degrees

August, December, 1999 and May, 2000

## CHEMISTRY DEGREES

**Suzanne A. Blum** (*Coppola, Lee, Vedejs*)\* – organic (UC Berkeley)  
**Andrew D. Bolig** (*Rasmussen*) – work, then grad school  
**Ryan Z. Brady** (*Vedejs*) – Eli Lilly  
**Gary M. Chinigo** (*Townsend*) – Ford  
**Ann F. Chopp** (*Koreeda*) – Parke-Davis  
**Aaron M. Conant** (*Townsend*) – process Pharmacia&Upjohn  
**Aaron M. Daniel** (*Penner-Hahn*)\* – Parke-Davis  
**Megan D. Davis** – Pfizer pharmaceutical sales  
**Christopher C. Goretski** (*Beck*) – work  
**Churlsun Han** – medicine (Medical College of Ohio)  
**Laura M. Harley** (*Pecoraro*) – public health (Emery)?  
**Jesica L. Kelley** (*Rasmussen*) –  
**Laura Khoury** (*Rasmussen*)\* – Anderson Consulting Chicago  
**Jason W. KIELTYKA** (*Pecoraro*) – chemistry (Wayne State)  
**Jesse L. Kuiper** (*Koreeda*)\* – organic (Illinois)  
**Shirley W. Lee** (*Goldstein*) – medicine (Wayne State)  
**Lawrence Li** (*Nolta*) – dentistry (U Minnesota)  
**Jeffrey P. Mc Mahon** (*Coppola*)\* – Parke-Davis  
**Christopher M. Mc Ginley** (*Townsend*) – organic (U Illinois)  
**Saira M. Rauf** –  
**Sara E. Roberts** (*Roush*)\* – organic (Harvard)  
**Owen M. Stark** – medicine (UM)  
**Benjamin A. Tourkow** (*Rasmussen*) – medicine (Indiana Medical College)  
**Shengdar Tsai** (*Uhler*)  
**Andrew W. Waltman** (*Penner-Hahn*)\* – organic (Cal Tech)  
**David E. White** (*Koreeda*)\* – organic (Harvard)

## BIOCHEMISTRY DEGREES

**Mohamed Abazeed** (*Beidler*)\* – medicine (UM MD/PhD)  
**Rehan J. Ahmed** (*Uhler*) – toxicology (UM SPH)  
**Shane M. Bahng** – will work with degree  
**Kevin D. Becker**  
**Andrew D. Bolig** (*Rasmussen*) – work, then grad school  
**Aaron Boyle** (*Peliska*) – Peace Corps, Kenya  
**Kimberly A. Cantrell**  
**Soumya Chakravarty** (*Goldman*)\* – medicine (Albert Einstein)  
**Jason S. Chang** (*Kaufman*)\*  
**Delia J. Chien** (*Yocum*) – will work, applying to veterinarian programs  
**Miri Choi** (*Ballou*) – applying to science programs  
**Ann F. Chopp** (*Koreeda*) – Parke-Davis  
**Aaron Conant** (*Townsend*) – Pharmacia & Upjohn  
**Hadi A. Dourra** (*Menon*) – pharmacy (UM)

## David J. Edwards

**Irina Elterman** (*Robins*) – pharmacy (UM)  
**David A. Engel**  
**Alfred J. Fleming**  
**Kendra K. Frederick** (*Ballou*)\* – applying to schools in Paris  
**Mary Ellen Freund** – Teaching program/EMU  
**Hongmei Ge** (*Yocum*) – EECS (UM)  
**Marieke R. Gilmartin** (*Schacht*)\* – Neuroscience, Penn State  
**Christopher C. Goretski** (*Beck*) – work  
**Nadia Haider** (*Ballou*) – medical school (Wisconsin)  
**Churlsun Han** – medicine (Medical College of Ohio)  
**Y-W. Grace Hsiao** (*Ninfa*) – dental school (UCLA)  
**Rebecca A. Ihrle** (*Marsh*)\* – immunology (Stanford)  
**Nicholas A. Keppeler** (*Coward*)\* – medicine  
**Thomas D. Kim** (*Thompson*) – medicine (Wayne State)  
**Christopher R. La Pensee** (*Turner*) – neuroscience (Cincinnati)  
**Caroline S. Lee** (*Giannobile*)\* – medicine (Wayne State)  
**Lawrence Li** (*Nolta*) – dentistry (U Minnesota)  
**Joseph P-C. Liu** –  
**Roneil G. Malkani** (*Pecoraro*)\* – medicine (George Washington U)  
**Victor Marinescu** (*Traynor*) – research, med school  
**Vlad Marinescu** (*Fuller*) – work, then school  
**Christopher M. Mc Ginley** (*Townsend*) – organic (U Illinois)  
**John Nagarath** (*Goldstein*) – medicine  
**Brent C. Nagy** (*Yocum*) – work  
**Ryan P. Owen** (*Nichols*) – pharmaceutical chemistry (UC-SF)  
**Saira M. Rauf**  
**Jennifer A. Regan** (*Blackwood*)\* – MD/PhD (Northwestern)  
**Erica D. Riddle** (*Ballou*)\* – immunology (Stanford)  
**David M. Somand** (*Peliska*)\* – medicine (UM)  
**Jennifer Stahl** (*Bardwell*) – work, Pfizer  
**Benjamin A. Tourkow** (*Rasmussen*) – medicine (Indiana Medical College)  
**Shengdar Tsai** (*Uhler*)  
**Michael D. Tseng** – medicine (Weil Medical College of Cornell U)  
**Bryan J. Vander Lugt** (*Fuller*)\* – Navy (San Diego)  
**Rohit Vanjani** (*Matthews*) – Federal Reserve NYC  
**Christopher Wilson** – work in pharmaceuticals  
**Thomas M. Witham** – medicine (Wayne State)

\*Honors Degree (includes undergraduate thesis)

# Spotlight on Chemistry Endowments

Many former students and senior faculty fondly remember the old chemistry library on the second floor of the 1908 building. Its musty atmosphere was tempered by pictures of chemistry legends like Gomberg, which in later years were periodically adorned with paper ties or hats by some unsanctimonious prankster. This was the home where many a student spent hours. When a break was needed, one gazed out of the windows to view the Diag scene, or got a Coke from the pop machine always nearby, or just socialized with another library occupant. One of the treasured traditions was assignment of a front door key that allowed entry to the library at all hours. This indicated that one really belonged.

A major change occurred in 1993 when the engineering library vacated the third and fourth floors of the UGLI (the undergraduate library). This became the site for consolidation of the separate science collections on main campus (chemistry, physics/astronomy, geology, biology and mathematics). To create the Unified Science Library (now the Shapiro Science Library), the walls were moved outward about 15 feet and the garish blue facade, was covered with the traditional Michigan red brick. This resulted in a modern, pleasant facility, along with better maintenance of the collections (including less loss of material), cost savings and greater convenience for some interdisciplinary researchers who no longer had to visit the several sites. But the greater distance from the chemistry laboratory, and the larger size of the facility as well as its seemingly less direct connection with the Department, produced a commensurate change in usage patterns and relationship with the users. There is an area reserved for reading hard copies of recent journals in the Shapiro Science Library with faculty cubicles containing computers. The consolidated library is more convenient for faculty involved in interdisciplinary research.

Since that momentous physical relocation, the rapid growth of on-line journals and computerized databases like Chemical Abstracts and Science Citation Index have further revolutionized everyone's use of the library. Today many library searches can be completely conducted from campus labs and offices; many articles can be viewed, printed or ordered without a trip to the library. David Peck, a talented information retrieval specialist and organic chemistry Ph.D., oversees this modern chemistry collection. He works diligently with several other science librarians to incorporate more fully the computerized collections into the system and make them accessible. He trains students in their uses and helps with searches. Of course for many old-timers and hopefully some of the younger generation, there is nothing like roaming the stacks and discovering something useful, serendipitous, and just enjoying the library as a place to catch up on some journal reading.

As the use of the library has evolved, so has the Department's chemistry library endowment fund. This fund has grown over the years from a combination of gifts designated for the library and those to the Kent Lanini Memorial fund, also designated for the library. The endowment's present annual income is used more broadly than just providing monograph and periodical support. Since the library's own budgets for the latter have largely recovered from budget cuts in the 70's and 80's it is less imperative to use all the income to supplement those purchases. Hence, some expenditures are directed at computer software for library searches and for support of an office for the chemistry librarian and computers in the chemistry building where students can be trained and searches conducted. We expect that the current endowment income can support such activities and supplement the library's monograph/periodical budget and annual gifts adequately for the foreseeable future. Should anyone be contemplating a large gift or bequest to the chemistry library endowment, we suggest that they contact the department to discuss the matter. One possibility would be to explore the establishment of a reading room in the chemistry building as an annex to the main science library with some of the popular journals and more computer terminals dedicated to on-line article retrieval, data searches and training. Additionally, we continue to subscribe to hard copy versions of most journals and to acquire access to numerous databases. This privilege is very expensive to maintain.

Our library is one of the best in the country with regard to electronic access. We are very proud of this access privilege.



# Gifts

Contributions from private and corporate donors received from July 1, 1999 – June 30, 2000

(\* Indicates corporate matching funds.)

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Harold Miller (Mineral Services)  
Taft Toribara*Student research*

# Alumni News

E-Mail: chem.alum@umich.edu

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

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## BEFORE 1940

**Wayne Cole** (Post Doctoral 1939, Bachmann) is living in Deerfield, IL.

**David W. Stewart** (PhD 1939, Fajans) is living in Rochester, NY. He retired from the Eastman Kodak Co. in 1975 as a Senior Laboratory Head. His wife, the former Gretchen B. Miller (PhD 1940) died in 1989.

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## 1940 - 1949

**Gerald L. Alexander** (BS 1949; MD 1955, Duke Univ.) is retired and living in Bay Harbor, FL.

**John A. Dean** (PhD 1949, Willard) is an Emeritus Professor of Chemistry at the University of Tennessee. He is active as an author and editor in the 1st edition of the Analytical Chemistry Handbook (published in 1995) and, the 15th edition of Lange's Handbook of Chemistry.

**Charles F. Krecke** (BS 1948, MD 1953) is retired and living in Pentwater, MI, but winters in Tucson, AZ.

**Donald F. Meyer** (BS 1949) lives in Fairfield Glade, TN, and was a product manager for the BASF Corp.

**Taft Y. Toribara** (PhD 1942, Willard) consults and currently has developed an X-ray fluorescence procedure for analyzing metallic elements at one millimeter intervals along a single hair strand. He was able to date exposure to dimethyl mercury in the recent death of a Dartmouth professor.

**Marjorie I. (Garman) Uhl** (BSC 1949; MA 1966, Central Mich. Univ. (Health Care)) volunteers for the Water Advisory Board in Orleans, MA, and is a registered clinical chemist for a hospital and several medical supply labs.

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## 1950 - 1959

**Martha L. Orr** (BSC 1932, MS 1939) was honored recently by the American Chemical Society as a fifty year member. She lives in Palo Alto, Calif.

The following alumni receiving degrees in the 1940-49 period were honored recently by the American Chemical Society as 50 year members:

**Edward G. Baker**, (BS 1948; PhD 1951, Brown Univ.)

**Donald F. Meyer**, (BS 1949)

**William Gasser**, (BS 1948; PhD, Univ. of Maryland)

The following alumni/alumnae receiving degrees in the 1950-59 period were honored recently by the American Chemical Society as 50 year members:

**Kathryn S. (Spackman) Andersen**, (PhD 1954, Vaughan)

**Beatrice A. Arnovich**, (MS 1952)

**Richard J. Bard**, (PhD 1951, F.E. Bartell)

**David A. Berman**, (PhD 1957, Parry)

**Samuel H. Dreisbach**, (MS 1951)

**George C. Feighner**, (MS 1950)

**Gaylord K. Finch**, (PhD 1954, Vaughan)

**Robert M. Fitch**, (PhD 1955, Halford)

**Howard L. Garrett**, (BSC 1950, MS 1957 (Botany))

**David E. Harmer**, (PhD 1955, Anderson)

**Harley Y. Jennings, Jr.**, (PhD 1953, F.E. Bartell)

**Edward Leon**, (PhD 1956, Smith)

**Joseph T. Leone**, (PhD 1956, Elving)

**Gordon Lockyear**, (BS 1949, MS 1950)

**Edward C. Olson**, (PhD 1955, Elving)

**Alexander Ross**, (PhD 1953, Smith)

**Richard H. Schwendeman**, (PhD 1956, Brockway)

**Duane N. Sunderman**, (PhD 1956, Meinke)

**John J. Van Voorhis**, (PhD 1956, FE Bartell)

**Robert D. Westland**, (PhD 1959, Smith)

**Herman Wexler**, (PhD 1953 (Ill.); Postdoc 1954, Ronsvedt)

The following alumni receiving their degrees in the 1960-69 period were honored recently by the American Chemical Society as 50 year members:

**John L. Griffin**, (PhD 1962, Case)

**John M. Powers**, (BSC+BSE 1967)

**Arnold S. Probst**, (PhD 1969, HB Mark)

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**Husni R. Alul** (PhD 1956, Smith) retired from the Monsanto Chemical Co. and lives in St. Louis.

**Howard M. Dess** (PhD 1955, Parry) is an Associate Professor at Rutgers University in New Jersey.

**Charles J. Eby** (BSC 1951; MS 1953, Dartmouth; PhD 1956, Duke Univ.) has retired from Monsanto and is living in Virginia.

**Raymond E. Maginn** (BSC 1956) lives in Columbus, OH, where he has retired as a senior editor for the Chemical Abstracts Service.

**Myrtle B. (Sundberg) McLain** (BS 1952, MD 1966) retired as Deputy Medical Examiner in Kent County, MI.

**Gilbert J. Sloan** (PhD 1954, Vaughan) is President of the Delaware Advanced Technology Center for Medical Devices.

**Martha "Peggy" B. (Wells) Stiles** (BS 1954) continues to add to her published titles as an author. Her latest effort is a picture book set on Grosse Isle.

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## 1960 - 1969

**Frederick H. Brohn** (BSC 1965; PhD, Wayne State Univ. (Biochem.)) is an Adjunct Professor at Oakland Community College.

**George C. Case** (BSC 1968; PhD 1972, Univ. of Washington (Biochem)) is employed by the U.S. Postal Service in Portland, OR.

**Marilyn W. (Chen) Chu** (PhD 1968, Cooke) is a computer programmer at Western Illinois University.

**Willard L. Craft** (BSC 1961; PhD) retired from Adrian College and moved to Bozeman, MO, with his wife, **Patricia R. (Skog) Craft** (BSC 1961).

**Harry A. Dugger, III** (PhD 1962, Smith) is President and CEO of Flemington Pharmaceutical Corp. in New Jersey.

**Dennis Flanagan** (BSC 1966) retired as plant manager from the Aexcell Corporation in Ohio and now lives in Grand Rapids, MI.

**Morton Z. Hoffman** (PhD 1960, Bernstein) received the 1999 Henry A. Hill Award of the ACS Northeastern Section given for outstanding service. He will serve as Chair of the Education Program Committee of the Division of Chemical Education in 2000-02.

**Jo Anne (Zelmanski) Kundrat** (BSC 1967) is living in State College, PA.

**Ronald H. Radzilowski** (MS 1966) is Manager of Primary and Finishing Technology at the Rouge Steel Co. in Dearborn, MI. The company produces coiled carbon steel for the automotive industry.

**Walter Robert Scheidt** (PhD 1968, Rasmussen) has been appointed to the endowed Warren Professorship at the University of Notre Dame.

**Arden R. Slotter** (PhD 1960, Parry) is an Emeritus Professor of Chemistry at Bluffton College, OH.

**Michael S. Zisman** (BSC 1966; PhD 1972, Univ. of Calif./Berkeley) is a senior scientist at the Lawrence Berkeley National Laboratories in Berkeley, CA.

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## 1970 - 1979

**Nicholas W. Beeson** (BSC 1979; PhD 1995, Harvard Univ. (Biophys.)) is a research scientist with ERIM International in Ann Arbor.

**John E. Bercaw** (PhD 1971, Brintzinger) has been named an Arthur C. Cope Scholar for the year 2000 by the American Chemical Society. He is a Professor of Chemistry at the California Institute of Technology.

**Betty Sue (Liggett) Brooks** (BSC 1971; MD) is a physician in Birmingham, AL.

**Thomas C. Buchanan** (BS 1974; MD 1978, Tulane Univ.) is an orthopedic surgeon in Terre Haute, IN.

**Lorrain M. (Losinski) Dang** (BSC 1975; PhD 1982, Univ. Calif./Berkeley) is a chemistry instructor at the City College of San Francisco.

**Paul A. Davis** (BSC 1974, PhD 1979 (Biol. Chem.)) is an Associate Professor at the University of California at Davis.

**Howard S. Friedman** (PhD 1976, NY Univ.; PDoc. 1977, Ashe) and his wife, Lori, have moved to Corvallis, OR, where he is a manager for the Hewlett Packard Corp.

**Daniel R. Gallie** (BS 1979; PhD 1985, Univ. Calif. at Davis (Biochem.)) is Professor of Biochemistry at the University of California at Riverside.

**Walter M. Holloway, Jr.** (MS 1970) is Secretary/Treasurer of the Holloway Brothers Produce Co. in Jessup, MD.

**Solomon A. Kamson** (BSC 1978; MD 1982, Washington Univ. of St. Louis) is President of the International Pain Program in Seattle, WA. He is a Board Certified Pain Specialist and a member of the clinical faculty of the University of Washington.

**Cornelius C. Maher, III** (PhD 1977, Gordus; MD 1986, St. Louis University) is a flight surgeon in the neurology training program at the Madigan Army Medical Center in Washington.

**Steven H. Peterson** (PhD 1972, Verdick/Taylor) is a senior scientist at Geo-Centers, Inc. in Virginia. Last year he received his 15th U.S. Patent for a system for destruction of shipboard waste.

**Sterling R. Putt** (MS 1974) is a Project Manager in the process R&D group for Pharmacia & Upjohn in Kalamazoo.

**David L. Rodgers** (MS 1967, Middlebury Coll.; Student, 1972) is Vice President for Business Strategy for Argus Associates in Ann Arbor.

**Ernesto L. Rodriguez** (MS 1979, PhD 1982, Overberger (Macromol. Sci.)) is a Research Associate for the B. F. Goodrich Co. in Ohio.

**John V. Scibelli** (PhD 1972, Curtis) has been named President of ConMed Aspen Laboratories in Englewood, CO.

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## 1980 - 1985

**Dean T. Behm** (BSC 1980; PhD 1985, Univ. of Massachusetts) is Director of Plastics Technical Services for Ciba Specialty Chemicals in Pennsylvania.

**Steven A. Boskovich** (BS 1983, MD 1987) is a physician at the Retina-Vitreous Institute in Flint, MI.

**Richard M. Byler** (BSC 1980, MD 1984) is a cardiologist in Jackson, MI.

**Rutgers L.G. Chow** (BS 1982; MS 1984, Univ. of Virginia (Chem. Eng.)) is Regional Vice President for sales in South East Asia for the Shipley Co., a division of Rohm & Haas.

**Stephen L. Coulter** (PhD 1983, Overberger) is Vice President of Research and Development for Carter-Wallace, Inc., in Pennsylvania.

**Cynthia (Tsang) Crouch** (MS 1981) works as a business manager for the E.I. duPont Company in Pennsylvania.

**Suma Datta** (BSC 1980; PhD 1987, Univ. of Calif./San Diego) holds a tenure position in the Department of Biochemistry and Biophysics at Texas A&M University.

**Maria J. Doa** (BS 1980; PhD Univ. of Pittsburgh (Organic)) is Director of the Toxic Release Inventory Program for the U.S. Environmental Protection Agency in Washington.

**Nicephoros A. Fotinos** (PhD 1981, Curtis) is a Development Associate at PPG Pretreatments and Specialty Products in Troy, MI.

**David S. Gorski** (BSC 1984, MD 1988; PhD 1994, Case Western Reserve Univ. (Cell. Physiology)) is an Assistant Professor of Surgery at the Robert Wood Johnson Medical School in New Jersey.

**David S. Gottfried** (BSC 1984; PhD 1990, Stanford Univ.) is a Research Scientist at the Georgia Tech Research Institute in Atlanta developing integrated optical biosensors to detect environmental and food-borne pathogens.

**Thomas J. Gustaferrero** (BS 1985; MD 1989, Johns Hopkins U.) is an ophthalmologist in Cleveland, OH.

**Eric C. Jackson** (BSC+BSE 1982; MBA 1998, Michigan State Univ.) is continuing his education in business operations management at Michigan State University.

**John J. Klutke** (BS 1985; MD) is Chief of Urogynecology at the University of Southern California School of Medicine.

**Frederic W. Lickteig** (BS 1980) is a Lieutenant Colonel in the U.S. Marine Corps stationed in Independence, MO.

**Karen D. Locke** (BSC 1982; MD) is a pediatrician in Dearborn, MI.



**John Quin, III** (BS 1982, U/M Flint) is a senior chemist for the Parke-Davis Research Laboratories in Ann Arbor.

**Ronald P. Swendris** (BSC 1982, MD 1986) is a physician for the Mid-Atlantic Eye Care Clinic in Chesapeake, VA.

**Marian L. Valentine** (BSC 1981; MSE 1994, Univ. of Washington) is a hydraulic engineer with the Army Corps of Engineers in the Pacific northwest.

**Scott A. Westveer** (BSC+BSE 1985) is employed by Luman Enterprises while building an engineering consulting practice in Texas.

**Josef K. Zehetmair** (BSC 1982; PhD 1988, Wayne State U.) is Manager of Analytical Services for PPG Industries in Troy, MI.

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## 1986 - 1989

**Fotis Fotiou** (PhD 1987, Morris) is manager of the International Formulations Dept. of American Cyanamid in Princeton, NJ.

**Val S. Goodfellow** (PhD 1986, Lawton) is an Associate Director in medicinal chemistry at Neurocrine Biosciences in San Diego, CA.

**D. Rachel Green** (BS 1986; PhD 1993, Harvard Univ.) is an Assistant Professor in the Department of Molecular Biology and Genetics of the Johns Hopkins University Medical School.

**Elizabeth A. Hugel** (PhD 1988, Griffin) is a research chemist in the Analytical Division of the BASF Corp. in Wyandotte, MI.

**Charles M. Kausch** (PhD 1989, Ashe) is a technologist with Omnova Solutions in Akron, OH.

**Lisa A. Lanning** (BS 1986; PhD 1994, Univ. of Vermont) is a chemist with Laidlaw Environmental Services in Columbus, OH.

**Shu-Ching Ma** (PhD 1989, Meyerhoff) is a principal scientist for the Via Medical Corp., and her husband, **Fu H. Benson Tsai** (PhD 1990, Overberger) is a Senior Research Fellow for the Rexam Imaging Corp. both in San Diego.

**Robert A. Pufahl** (BS 1988, PhD 1994, Marletta (Med. Chem.)) is a research scientist in the pharmaceutical division of the Monsanto Co. in St. Louis, MO.

**John A. Sandin III** (BS 1989, MD 1993) will complete his residency at the University of Wisconsin in 2000 and will take up a Fellowship at the University of Alabama, specializing in surgery of the spine.

**Leo R. Sharkey** (BS 1986; MS 1996, Ohio State U. (Mech. Eng.)) is a manager at Shipley, Inc., who supply photo resist systems for the semiconductor industry.

**Frederick M. Smith** (BSC 1987; MD 1991, Michigan State U.) is a surgeon at the Great Lakes Plastic Surgery Center in Traverse City, MI.

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## 1990 - 1995

**Mary P. (Andrews) Bradley** (MS 1990, PhD 1993 (Pharmaceutical Chem.)) works in computer aided molecular design for RhonePoulenc, Inc., at the Research Triangle Park in North Carolina.

**Benjamin M. Chien** (PhD 1994, Lubman) is President and CEO of Quest Pharmaceutical Services in Newark, DE.

**Joe S. Chomchai** (BSC 1990; MD 1994, Wayne State U.) is a otolaryngologic physician and surgeon in Mt. Pleasant, MI, and will be a volunteer clinical faculty member in Central Michigan University's physician assistant school. He reports his first publication dealing with head and neck cancer.

**Brian C. Cooper** (BSC 1994; MD 1999, Wayne State Univ.) is a resident surgeon at the University of Iowa Hospitals. His speciality is obstetrics and gynecology.

**Chantal R. Culpepper** (BS 1991; MD 1997, Ohio State U.) has joined Wayne State University as a physician in their family practice medical program.

**Jon P. Degnore** (BS 1991; PhD 1997, Univ. of Florida) is employed by Perspective Biosystems in Marlboro, MA.

**Mamadou S. Diallo** (MS 1993) is Director of the Molecular Environmental Science & Engineering Collaboration for the California Institute of Technology and is a visiting faculty member at Howard University in Chemistry and Civil Engineering.

**Louis I. Grace** (PhD 1994, Lubman) is a Visiting Scientist at the Hebrew University of Jerusalem in Israel.

**Monica A. Guzman-Rojas** (MS 1993) is living in Hackettstown, NJ.

**Brian B. Haab** (BS 1992; PhD 1998, Univ. of Calif/Berkeley) is a Principal Investigator for the Van Ardel Institute in Grand Rapids.

**Tasir S. Haque** (BS 1991; PhD 1996, Univ. of Wisconsin) is a Senior Research Scientist with the DuPont Pharmaceutical Co. in Delaware.

**Sean P. Hickey** (MS 1994) is an Instructor in Chemistry at Delgado Community College in Louisiana.

**Michael Z. Hoeman** (PhD 1993, Marino) is a senior scientist at Sepracor, Inc., in Marlborough, MA.

**James D. Hoeschele** (PhD 1969, Michigan State U.; Research Scientist 1994, Curtis/Pecoraro) is a Lecturer in Chemistry at Michigan State University.

**Toby E. Horwitz** (MS 1993) is completing her graduate work in Pharmacy.

**Jeffrey D. Hsi** (PhD 1990, Koreeda) is a Patent Counsel for Kinetix Pharmaceuticals, Inc., in Medford, MA.. The company specializes in small molecule kinase inhibitors for a variety of disease indications.

**Regina M. (Wagner) Janicik** (BS 1990; MD 1994, Univ. of Chicago) is a practicing physician specializing in internal medicine at New York University.

**Sigridur Jonasdottir** (PhD 1995, Coucouvanis) is a research chemist employed by SRI International in Menlo Park, CA.

**Christopher A. Kennedy** (BS 1994; MS Univ. of Calif./San Diego (biology)) is a restaurant owner in Eugene, OR.

**Robert Kertayasa** (MS 1990) is Sales Manager for Candela Instruments in Fremont, CA.

**Agnes S. Kim-Meade** (PhD 1993, Marino) is an Associate Principal Scientist at the Schering Plough Research Institute in New Jersey.

**Sang-Ho Koo** (PhD 1992, Koreeda) is an Associate Professor of Chemistry at Myong Ji University in South Korea.

**Heewon Lee** (PhD 1995, Lubman) is a senior scientist with Arqule, Inc. in Medford, MA.

**Keqiang Li** (PhD 1994, Koreeda) is a Senior Research Chemist in new product and process development for Cargill, Inc., in Minneapolis, MN.

**Diane L. (Babuts) Montgomery** (BS 1991; MD 1995, Univ. of Rochester) has

joined a pediatric practice in Syracuse, NY., and became a Fellow of the American Academy of Pediatrics in 1999.

**Paul I. Mullen** (MS 1995; MBA, Univ. of Notre Dame) is Marketing Manager for Janssen Pharmaceutica in Pennsylvania.

**Shahid M. Murtuza** (BS 1994; PhD 1999, Penn. State Univ.) has a postdoctoral associate position at the University of Chicago.

**Patrick D. O'Connell** (BSC 1993) is a Chemical Buyer for the Parke-Davis Active Pharmaceutical Ingredient Manufacturing plant in Holland, MI while pursuing an MBA degree at Grand Valley State University.

**Adrian A. Polliack** (BS 1990; PhD 1994, Oxford Univ., Engl.) is a biomedical engineer with the Rancho Rehabilitation Engineering Program in Downey, CA, and an Adjunct Asst. Professor in the University of Southern California Biomedical Engineering Department.

**Jeffrey S. Pudlo** (PhD 1991, Townsend) is a senior scientist at Cygnus, Inc. in Redwood City, CA.

**Jeffrey A. Read** (PhD 1993, Francis) is a chemist at the Army Research Laboratory in Maryland.

**Rachel S. Rohde** (BS 1994; MD 1999, Harvard Univ.) is a resident surgeon at the University of Pittsburgh Medical Center.

**Teclé S. Rufael** (PhD 1994, Gland) is a research chemist for the Texaco Group, Inc. working on a project to convert natural gas to a liquid product.

**Robert M. Schelkun** (MS 1991) is a Senior Associate Scientist at Parke-Davis Research Laboratory in Ann Arbor.

**Catherine L. (Lobach) Scott** (BS 1994) is a laboratory supervisor for the Cayman Chemical Co. in Ann Arbor.

**Michelle M. (Poppelreiter) Spencer** (BS 1991, BPh 1995, Michigan) is an Oncology Clinical Pharmacy Specialist at the Loma Linda Medical Center in California.

**Kimberly A. (Kramer) Stickland** (BS 1992; PhD 1997, Univ. of Arizona (Pharmacology/Toxicology)) is a Research Scientist and Study Director for DuPont Pharmaceuticals in Delaware.

**Christopher J. Voci** (BSC 1995; JD 1999, Franklin Pierce Law School) is an Associate with the Pewrie & Edwards Law firm in New York City.

**Richard L. Waite** (BS 1991) is completing his MS degree at Northern Illinois University in DeKalb.

**Yingqi K. Wang** (PhD 1993, Lubman) is a laboratory head in Drug Discovery for the Novartis Pharmaceuticals Corp. in New Jersey.

**John P. Williams** (PhD 1991, Pearson) is an Associate Director in chemistry at Neurocrine Biosciences in San Diego, CA.

**Karen K. (Beatty) Zimmerman** (MS 1994) is a senior technician in the Molecular Biology Department of Rutgers University in New Jersey.

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## 1996 - 1999

**Farrah Bagaman** (BS 1999) is living in Hong Kong.

**Susan L. (Ritenour) Barker** (PhD 1999, Kopelman) is a research chemist at the National Institute of Standards & Technology in Gaithersburg, MD.

**Robert J. Cain** (PhD 1997, Glick) is a senior scientist with Allergan, Inc., and his wife, **Teresa C. (Taylor) Cain** (PhD 1997, Lubman) is an analytical chemist at Cortex Pharmaceuticals, both in Irvine, CA.

**Sherry R. Chemler** (PhD 1999, Roush (Indiana U.)) is a postdoctoral scholar at the Memorial Sloan-Kettering Cancer Center in New York City.

**Yajuan Chen** (PhD 1999, Lubman) is a postdoctoral scholar in Pharmaceutical Chemistry at the University of California, San Francisco.

**Ting-Lan Chiu** (PhD 1999, Goldstein) is a postdoctoral scholar in the Jeffrey Skolnick's group at the Donald Danforth Plant Science Center in St. Louis, MO.

**Heather A. (Crocker) Clark** (PhD 1999, Kopelman) is a postdoctoral scholar at the University of Connecticut Health Center.

**Brent A. Donovan** (PhD 1998, Sension) is a scientist specializing in inhalation analysis at Magellan Laboratories in North Carolina.

**Danette A. (Domagala) Dudley** (BS 1996) is working as a senior assistant organic chemist for the Parke-Davis Research Laboratories in Ann Arbor.

**Joan M. Esson** (PhD 1999, Meyerhoff) is a postdoctoral scholar at Pennsylvania State University.

**Michael H. Feld** (BS 1999) is a research assistant in the University of Michigan Dental School pending admission to medical school.

**Erik J. Hembre** (PhD 1996, Pearson) is a senior organic chemist with the Eli Lilly Co. in Indianapolis.

**Tracy M. Hobson** (BS 1998) is an Associate Scientist with the Dupont Pharmaceutical Co. in Wilmington, DE.

**Maria Jancevski** (BS 1998) plans to enter the Wayne State University Medical School in August of 2000.

**Christina A. (Johnson) Johannesson** (BSC 1996; MA 1998, Trinity University) is teaching communication arts history at Northside intermediate school in San Antonio, TX.

**Christopher A. Laroo** (BSC 1996) is an analytical product engineer for Horiba Instruments, Inc. in Ann Arbor.

**Jordan S. Laser** (BS 1999), is a Research Associate with Angion Biomedica in Brookville, NY.

**Scott T. Lefurgy** (BS 1999) plans to enter the biochemistry program at Wisconsin/Madison in the fall of 2000.

**Irwin M. Liu** (BS 1999) is a research associate with Genelabs Technologies in California.

**Yan-Hui Liu** (PhD 1996, Lubman) has accepted a position as senior scientist with the Schering-Plough Research Institute in Kenilworth, NJ.

**Emily J. Maglott** (PhD 1998, Glick) is a Senior Research Chemist for the Avery Dennison Co., Graphics Division, in Painesville, OH.

**Mohamad Adnan Mansour** (PhD 1996, Curtis) is a scientist and engineer for the General Electric Lighting Co. in Cleveland.

**Jennifer L. Marti** (BS 1999) is a high school biology teacher at St. Peter's Preparatory School in New Jersey while she applies for medical school.

**YuanMi** (PhD 1999, Pearson) is a postdoctoral fellow at Harvard University.

**Elizabeth A. Mieczkowski** (BS 1999) is a Research Assistant in the University of Michigan Pathology Department.

**Mark D. Mowery** (PhD 1999, CE Evans) is a senior research chemist with Merck & Co. in West Point, PA while his wife, **Kelly A. (Brooks) Mowery** (PhD 1999,

Meyerhoff) is an Assistant Professor at Kutztown University.

**Edward P. Nicholas** (BS 1999) is an analytical chemist at Huntingdon Life Sciences in New Jersey.

**Scott E. Osborne** (PhD 1996, Glick) is a scientist at Procter & Gamble Co.

**Russell B. Pawlowski** (CMB 1999, Engl 1999; MD) is a clinical research associate for Warner-Lambert, Parke-Davis Laboratories in Ann Arbor.

**Miguel J. Pereira** (BS 1999) is a research assistant in chemistry at the University of Michigan in Ann Arbor.

**Mark G. Qian** (PhD 1996, Lubman) is a Senior Research Scientist at Dupont Pharmaceutical Co. in Newark, DE.

**Moira C. Ringo** (PhD 1999, CE Evans) is a Senior Scientist in Analytical Sciences, with GlaxoWellcome, Inc. in Raleigh, NC.

**Pernilla Rollin** (MS 1997) is a radiochemist at the Schering-Plough Research Institute in Kenilworth, NJ.

**Bobby L. Rose** (BS 1997) is a Network Engineer for the University of Michigan Medical Center.

**Timothy R. Rozof** (BS 1999) is a chemist with Pentech Pharmaceuticals, Inc. in Chicago, IL

**Amy Y. Shih** (BS 1999) is a Research Assistant in the Internal Medicine Dept., Allergy Section, of the University of Michigan.

**Amethyst C. Smith** (BSC 1999) is a chemistry and physics high school teacher in Houston, TX.

**Glen E. Southard** (PhD 1998, Curtis) is a polymer chemist for the Schafer Corporation in Livermore, CA.

**Erich D. Steinle** (PhD 1999, Meyerhoff) is a postdoctoral scholar at the University of Florida in Gainesville.

**Erland P. Stevens** (PhD 1997, Pearson) is an Assistant Professor of Chemistry at Davidson College in North Carolina.

**Larry A. Walker, II** (PhD 1998, Sension) is a chemist for Clark MXR in Dexter, MI.

**Andrew T. Yen** (PhD 1997, Kopelman) is employed by Baker Petrolite, a division of the Baker Hughes Corp., in Sugar Land, TX.

**Jeffrey P. Zajac** (BS 1996) is a science teacher at Littleton High School in Denver, CO.

**Kefei Zheng** (PhD 1998, Lubman) is a senior applications chemist with the Water Corporation in Milford, MA.

## In Memoriam

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

**Frederick W. Albaugh** (PhD 1942, FE Bartell) died February 22, 1999 in Richland, WA. He retired as Director of the Battelle Pacific Northwest Laboratories, was a member of the National Academy of Engineering and, a Fellow of the American Nuclear Society.

**Robert F. Broderick** (BS 1949) died May 13, 1997, in Molalla, OR.

**James H. Carter** (PhD 1962, Smith) died February 29, 2000, in Palmetto, FL. He retired from the Organic Chemistry Laboratories at Barnard College, Columbia University.

**Minn-Shong Chi** (PhD 1972, Overberger) died September 5, 1999 in Newark, NJ. He was employed by the Aviation Division of Hercules, Inc. in New Jersey.

**Charles C. Countryman** (BS 1934, MS 1935) died December 18, 1993, in Cerritos, CA. He was retired from Dart Industries.

**James Day** (MS 1936) died March 18, 1999, in New Canaan, CN. He worked for Dow Chemical Co. from 1936 - 1977.

**Malcolm H. Filson** (PhD 1937, Willard) died October 8, 1997, in Winter Haven, FL. He was an Emeritus Professor of Chemistry at Central Michigan University.

**Nicholas J. Galluzzi** (BSC 1945; MD, Univ. of Chicago) died November 24, 1991. He was a Rear Admiral in the U.S. Public Health Service and former Director of the U.S. Public Health Service Hospital on Staten Island.

**Marian B. Geiger** (PhD 1932, Anderson) died January 1, 1986. She had worked for the Hooker Chemical Co.

**Carroll L. Hoffpauir** (MS 1934) died January 22, 1999 in Metairie, LA. He was a research chemist at the Southern Regional Research Laboratory.

**Helen E. Konapek**, a former secretary in the Department, passed away in Ann Arbor, MI, on May 5, 2000.

**Norman Krieger** (BS 1937; ScD 1965, Royal College of Science (Biochem)) died August 7, 1997 in Riverdale, NY. He had been a high school teacher and Chair of the Science Department in West Hempstead, NY.

**Sidney I. Miller** (Instructor in Chemistry, 1951; PhD 1951, Columbia) died September 17, 1999 in Chicago. He had instructed at Michigan during 1950-51;

and went on to the Illinois Institute of Technology where he taught for 38 years.

**Marian Carol (Bade) Pease** (BS 1947; MS, Northern Illinois Univ.) died December 3, 1998 in Tucson, AZ. She had taught in Holland, MI for 30 years, and served as a counselor and Director for the Ventura Alternative School.

**Eugene A. Radell** (BSC 1953) died in Fairport, NY, January 18, 1998. He had been a unit director for the Eastman Kodak Co.

**Patricia A. (Clancy) Schuerger** (BS 1948) died February 15, 1990, in Maryland.

**Dorothy (Houghton) Soule**, widow of Assoc. Prof. Byron A. Soule, died December 2, 1997 in Ventura, CA, at the age of 100.

**Charles C. Templeton**, died December 28, 1999 in Houston, TX. He had instructed in the Department from 1948-1950. He later accepted a position with the Shell Development Co. in Houston where he worked until 1981.

**Kenneth A. Van Lente** (PhD 1931, Ferguson) died recently in Macomb, IL (date unknown). He was Professor Emeritus at Southern Illinois University.

**Bruce H. Wark** (PhD 1960, Elderfield) died June 20, 1999, in Woodcliff, NJ. He had been a senior research scientist with Eastman Kodak Co.



# Faculty

- Arthur J. Ashe III**, Professor. *Organometallic Chemistry*.
- Mark M. Banaszak Holl**, Associate Professor. *Synthetic and Mechanistic Solution, Surface, and Solid State Chemistry*.
- John R. Barker**, Professor, Chemistry and Atmospheric, Oceanic and Space Sciences. *Chemical Kinetics, Atmospheric Chemistry*.
- Larry W. Beck**, Assistant Professor. *Analytical NMR spectroscopy of Materials; Zeolite Catalysis*.
- Mary Anne Carroll**, Associate Professor, Chemistry and Atmospheric, Oceanic and Space Sciences. *Atmospheric Chemistry*.
- Zhan Chen**, Assistant Professor. *Biomaterial and Polymer Surface, Biocompatibility*.
- 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*.
- Seyhan N. Ege**, Professor. *Heterocyclic Reactive Intermediates*.
- B. J. Evans**, Professor. *Solid State Chemistry: Electronic and Magnetic Materials*.
- Carol Fierke**, Professor, *Biological Chemistry*.
- Anthony H. Francis**, Arthur F. Thurnau Professor. *Magnetic Resonance, Vibrational and Electronic Spectroscopy of Materials*.
- Eitan Geva**, Assistant Professor. *Theoretical and Computational Chemistry*.
- John L. Gland**, Professor, Chemistry, Chemical Engineering, and Applied Physics. *Solid State and Surface Chemistry, Physical Chemistry*.
- Gary D. Glick**, Werner Bachmann 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. *Microwave Spectroscopy of Weakly Bonded Complexes*.
- Richard M. Laine**, Associate Professor, Materials Science and Engineering and Chemistry. *Materials Chemistry*.
- Lawrence L. Lohr**, Professor. *Theoretical Studies of Molecular Structure and Reactivity*.
- David M. Lubman**, Professor. *Biological Mass Spectrometry, Spectroscopy and Instrumentation*.
- Anna K. Mapp**, Assistant Professor. *Organic Chemistry, Chemical Biology, New Synthetic Methods*.
- 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*.
- Adam J. Matzger**, Assistant Professor. *Organic, Polymers/Organic Materials*.
- 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. *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**, Associate 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 Gombert Professor. *Organic Chemistry*.
- Nils G. Walter**, Assistant Professor. *Chemical Biology*.
- Barbara J. Weathers**, Lecturer, and Lecturer in Comprehensive Studies Program.
- John R. Wiseman**, Professor. *Synthetic Organic Chemistry and Mechanisms of Chemical Reactions*.
- Omar Yaghi**, Professor. *Materials Chemistry*.
- 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, Thomas M. Dunn, Richard G. Lawton, 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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World Wide Web Address: <http://www.umich.edu/~michchem> E-mail: [chem.alum@umich.edu](mailto:chem.alum@umich.edu)

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