

University of Michigan  
**C**hemistry  
 NEWSLETTER

## Letter from the Chair

I am pleased to send greetings and to highlight the activities of the Chemistry Department over the past year under the outstanding leadership of Professor Mark Meyerhoff (Chemistry Department Chair, 1/09 – 7/10). We are very thankful for Professor Meyerhoff's brilliant performance in recruiting new faculty and staff as well as managing the budget and departmental policy.

The Department is making enormous strides towards becoming one of the top Chemistry programs in the nation, as validated by increases in the departmental ranking in recent surveys. Over the past year, the Department recruited a large class of high quality graduate students and added two new assistant professors: Pavel Nagorny, a synthetic organic chemist who is supported by the newly established Robert A. Gregg endowed professorship, and Nate Szymczak, an inorganic and materials chemist. Dr. Szymczak's hire is the Chemistry component of a university-wide interdisciplinary effort (including faculty hires in the colleges of LS&A, Engineering, and the School of Natural Resources and Environment) focused on Energy Storage and funded by the Interdisciplinary Junior Faculty Initiative through the Provost's and President's offices. This initiative coincides with a state-wide focus on research and development in the areas of batteries and renewable energy.

We are also proud to announce that three faculty members were promoted from As-

sociate Professor with tenure to Professor with tenure last year: Anna Mapp, an organic/chemical biology chemist; Melanie Sanford, an organic/inorganic chemist; and Eitan Geva, a theoretical/computational chemist. These faculty members were promoted based on their outstanding accomplishments and efforts in all three areas of the department: research, teaching and service. Finally, many Chemistry faculty members were recognized with awards over the past year, including: Michael Morris, named the Richard D. Sacks Collegiate Professor of Chemistry; A. Ramamoorthy, elected fellow of the American Association for the Advancement of Science; and Melanie Sanford, awarded the National Fresenius Award, the ACS Award in Pure Chemistry, and the 2010 John Dewey Award for teaching excellence. Further, we learned recently that Raoul Kopelman will receive the 2011 Pittcon Analytical Chemistry Award.

Over the past year the University of Michigan and the state of Michigan have been struggling to deal with the economic downturn. The Chemistry Department is overcoming these challenges by enhancing our external research profile and development efforts, and by increasing the efficiency of our teaching and research operations. The generous support of our research and teaching efforts by alumni (and others) has become increasingly important for maintaining and enhancing excellence in all areas of the department. Among other efforts, this support allows us

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2010

The Regents of the University of Michigan:  
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to engage University of Michigan undergraduates in summer research projects and to enhance the research experience of the Chemistry graduate students. On behalf of the students and faculty who benefit from this support, I thank you sincerely and invite you to visit the Department anytime

that you are in town. I look forward to talking with you.

Best wishes,

Carol Ann Fierke, Chair  
Jerome and Isabella Karle Professor of Chemistry and Professor of Biological Chemistry

## Spotlight: Profiles of New Faculty

We highlight faculty members who have joined the Department since the last newsletter. Their appointment speaks well for our future.

### Pavel Nagorny

Assistant Professor  
PhD: Harvard University  
PostDoc: Memorial Sloan-Kettering Cancer Center

Total Synthesis, Chemical Glycobiology

#### Research and Teaching Interests

The research interests of our group lie in the areas of target-oriented synthesis and new reaction development. The potential synthetic targets range from small molecule natural products to glycoproteins of

demonstrated therapeutic value. It is our goal to develop practical synthetic methods of broad utility and apply them to the synthesis of complex natural products and glycoconjugates for the studies in medicine and glycobiology.



Synthesis of natural products with demonstrated anticancer activity is of high interest to our group. Among the various targets that we are planning to synthesize are the natural products incednine and

lactimidomycin. Incednine is a natural macrolide isolated from the culture broth of *Streptomyces sp.* ML694-90F3. This compound has been shown to suppress the activity against the anti-apoptotic function of Bcl-2/Bcl-xL proteins of human small cell lung carcinoma Ms-1 cells in 100nM concentrations when combined with known anti-tumor drugs. Lactimidomycin is a macrolide isolated from *Streptomyces amphibisporus*. This natural product is a selective inhibitor of cancer cell migration (100 nM range). It is also cytotoxic and exhibits antiproliferative properties *in vivo* against various tumors including MDA MB 231 human breast adenocarcinoma. Our objective is to develop total syntheses of these and related anticancer natural products and use those syntheses as platforms for the preparation of simpler and more potent anticancer therapeutics.

Glycobiology and glycoprotein synthesis is an important component of our research program, and we believe that developing new synthetic tools for the carbohydrate synthesis, glycoconjugation, and peptide ligation will facilitate our understanding of glycoprotein function and properties. Our group has a long-standing interest in accessing synthetic polysialic acids and their conjugates to immunogenic proteins. 2,8-polysialic acid has been identified as an important small cell lung cancer (SCLC) marker that was found in nearly every patient examined. It is our ultimate goal to explore the possibility of using 2,8-polysialic acids for the vaccination against small cell lung and related cancers.

### Department of Chemistry

#### Newsletter

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### Nathaniel Szymczak

Assistant Professor  
PhD: University of Oregon  
PostDoc: MIT, Cal Tech

Energy Science, Inorganic Chemistry,  
Materials Chemistry,  
Organometallic Chemistry

#### Research and Teaching Interests

With a rising global population and increasing industrialization, the need to establish new and energy-efficient chemical conversion schemes is vital. Investigations into the discovery and implementation of innovative conversion schemes

could lead to new ways by which chemical feedstocks are processed and recycled with minimal energy input. However, many aspects of the underlying science



behind such strategies must be developed prior to large-scale implementation. To address these issues, our research program will uncover new strategies to develop

catalytic methods for energy recycling and delivery.

Several of these approaches are fundamentally new/unexplored, which make these projects an exciting area of research to pursue, with the possibility to uncover high-impact results. Our research program has several components:

1) The construction of inorganic electrocatalysts that directly regenerate a hydrogen-storage material by electrocatalytic hydrogenation. This is fundamentally new approach that we will explore for the regeneration of spent ammonia borane fuels, which are arguably the most promising materials to study for hydrogen storage. Accomplishing this goal will translate to the viability of a material with the highest known reversible H<sub>2</sub> storage density.

2) The development of catalysts to efficiently hydrolyze urea (typically present at ~0.3 M in urine) found in agricultural and human waste streams to release ammonia and thus recycle the “fixed nitrogen.” We will design catalysts based on cues that Nature has provided, to facilitate the binding and hydrolysis of urea at non-traditional metal sites to release and recycle the energy-rich ammonia that is otherwise discarded. Studies based on these unusual catalyst designs will also aim to understand the underlying concepts of how secondary coordination-sphere effects modulate binding and activation of substrates.

3) The design of catalysts for the efficient delivery of H<sub>2</sub> to appropriate substrates. These studies will examine how H<sub>2</sub> can be directed to heterolytically deliver

H<sup>+</sup>/H<sup>-</sup> equivalents to a substrate with participation from the secondary coordination sphere of the ligand(s) and also give rise to unusual modes of activation.

A large synthetic effort is required to develop these alternative energy recycling strategies. Therefore, our group will use a variety of inorganic synthetic air-free techniques (Schlenk, glovebox, high pressure reactivity) to prepare the new molecular constructs and use a battery of physical methods (e.g. NMR and IR spectroscopy, X-ray crystallography, electrochemistry) in order to assess their catalytic efficacy. When successful, our efforts will change the way that we think about energy-recycling/storage strategies.

## Faculty News

**Hashim M. Al-Hashimi** has received the Robert L. Kuczkowski Faculty Career Development Award and has been named the Robert L. Kuczkowski Professor of chemistry. A recent article by Hashim and coworkers, “RNA Dynamics by Design: Biasing Ensembles Towards the Ligand-Bound State” was featured on the cover of *Angew. Chem. Int.* **2010**, *49*(33), 5731.

**Charles L. Brooks, III** was selected to receive the Purdue University Outstanding Alumni award for 2010. The award was in recognition of his contributions in biophysical chemistry, particularly in modeling the structures and interactions of biomacromolecules.

**Kate C. Carroll** and **Kristina Karbstein** have left the University and are now at the Scripps Research Institute in Jupiter, FL.

**Brian P. Coppola** was selected as a 2009 U.S. Professor of the Year by the Carnegie Foundation for Advancement of Teaching and the Council for Advancement and Support of Education. Founded in 1981, the U. S. Professors of the Year Award is given to a single professor nationwide each year (in the Doctoral and Research category) who has demonstrated “extraordinary dedication to undergraduate teaching.” Brian was selected from more than 300 top professors in the United

States. The award was presented last November at a ceremony at the Willard Intercontinental Hotel in Washington, DC. A brief record of the award address is available at the Professors of the Year web site: <http://www.usprofessorsoftheyear.org/winners/winners09.cfm>



*Peter Alaimo, Brian Coppola and Mark Meyerhoff at the award ceremony*

**Dimitri N. Coucouvanis**, Lawrence S. Bartell Collegiate Professor of Chemistry, retired from active status in May and was appointed Professor Emeritus. Professor Coucouvanis received his BS degree from Allegheny College in 1963 and his PhD from Case Institute of Technology in 1967. He completed a postdoctoral research fellowship at Columbia University in 1968, and from 1968-83 he served on the faculty of the University of Iowa. He joined the University as a Professor of Chemistry in

1982 and was appointed to the Lawrence S. Bartell Collegiate Professorship in 2001.

Dimitri's research focused on the synthesis and characterization of iron sulfur clusters that informed on the role of these systems in a wide range of metalloenzymes. His seminal work relating to the FeMoS cluster in the enzyme nitrogenase has been cited thousands of times. He pioneered the use of metallosupramolecules as molecular transport agents across membranes. His research resulted in over 200 publications, book chapters, and presentations at international meetings. His honors include the University's Distinguished Faculty Achievement Award and the Margaret and Herman Sokol Award in Sciences, as well as the Alexander von Humbolt Research Award, a Guggenheim Fellowship, an Alfred P. Sloan Fellowship and election as a fellow of the American Association for the Advancement of Science.

**Theodore Goodson, III** is a recipient of a 2010 NSF American Innovation Fellowship in the Division of Materials Research.

**Kristina Hakansson** is now serving on the Board of Directors of the American Society for Mass Spectrometry (2009-2011).

**Paul R. Jones** has been selected as a 2010 ACS Fellow. Paul had been a faculty member of the Chemistry Department of the University of New Hampshire 1956-



1995. Since his retirement in 1996 he has been a visiting scholar in the UM Chemistry Department. He is the Editor of the *Bulletin for the History of Chemistry* 1995-2011. He also advises the UM ACS Affiliates.

**Nicolai Lehnert** and W. Robert Scheidt (PhD 1968, Paul Rasmussen) organized an Inorganic Chemistry FORUM, "The Coordination Chemistry of Nitric Oxide and Its Significance for Metabolism, Signaling and Toxicity," which was published in *Inorganic Chemistry* **2010**, 49(14).

**Anne J. McNeil** was awarded a 2010 NSF Career Award. On November 8 she moderated an Aldrich Materials Science sponsored C&EN Webinar on "Complex Macromolecular and Nanoscale Structures by Combinations of Living Radical and Ring Opening Polymerizations."

**John Montgomery** and coworkers have written an article on nickel catalyzed coupling of aldehydes and acetylenes (*J. Am. Chem. Soc.*, DOI: 10.1021/ja102262v) which was featured as a Highlight in *C&EN*.

**Vincent L. Pecoraro** has been selected as a 2010 ACS Fellow. He was also selected for a 2010 Blaise Pascal International Research Chair which will allow him to spend his 2011 sabbatical leave at the University

of Paris (Orsay). He also received the Vandis Award for his contributions to the chemistry of vanadium. His award address was delivered at the 7<sup>th</sup> International Symposium on the Chemistry and Biological Chemistry of Vanadium held in Toyama, Japan in October. Vince was a plenary speaker at EURO-BIC in Thessaloniki, Greece. He will be a keynote speaker at AsiaBIC In Kaoshiang, Taiwan and at the Pacificchem conference in Honolulu this fall. In addition he will be a Taiwan National lecturer in the fall.

**Ayyalusamy (Rams) Ramamoorthy** was elected a fellow of the American Association for the Advancement of Science (AAAS) in 2009. He was a Willmore Fellow of the University of Melbourne, Australia, and the keynote speaker in the Australian Biophysical Society meeting in 2009. He is a guest editor for the special issue on "Membrane Protein Dynamics: Correlating Structure to Function," in *BBA Membranes Journal*. He was recently selected for the Editorial Board of the journal *Magnetic Resonance*.

**Melanie Sanford** has been recognized by two very important 2010 awards by the ACS. These are the National Fresenius Award sponsored by the national chemical honorary society Phi Lambda Upsilon and the ACS Award in Pure Chemistry spon-

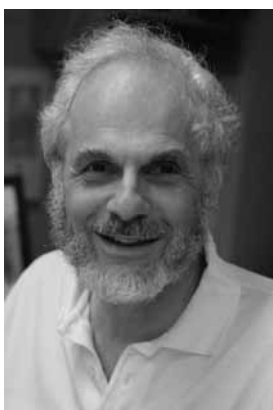
sored by the Alpha Chi Sigma Fraternity and the Alpha Chi Sigma Educational Foundation. Both awards are presented annually to an outstanding chemist under the age of 35 who has achieved national recognition. Melanie is the first member of our Department to receive the Fresenius Award, which has been in existence since 1965. The Award in Pure Chemistry was initiated in 1931. Lawrence Brockway (1940) and Lawrence Oncley (1942) were only prior awardees from the Department. The list of other prior awardees includes many of the giants of our field! Melanie was also awarded the 2010 John Dewey Award by LSA for long term commitment to undergraduate students.

**Nils G. Walter** is the principal investigator of a recently funded \$1.7M NSF Major Research Instrumentation grant which will fund the Single Molecule Analysis in Real-Time (SMART) Center. The SMART center in room 3080 Chemistry will house three open-access single molecule microscopes which will greatly enhance the capability for high-content screening of biological samples one molecule at a time. The Center will have a ten-member faculty steering committee, led by Professor Walter, and a Laboratory Director, Dr. Tristan Tabouillot, who is performing the day-to-day operation.

## Faculty Profiles

**Michael D. Morris** was recently named the Richard D. Sacks Collegiate Professor of Chemistry. Collegiate chairs honor the recipient and a former faculty member for whom the chair is named. The late Professor Sacks, himself a distinguished analytical chemist, was a faculty member in our Department from 1969 until his untimely death in 2006.

Mike Morris was born in New York City and raised in New Jersey. He received a B.A. in Chemistry from Reed College in Portland, Oregon and a Ph.D. from Harvard. Doctoral work in electrochemistry was performed with Professor J.J. Lingane. He then joined the Chemistry faculty of Pennsylvania



State University, where he conducted studies of the electrochemistry of organometallic compounds, with a brief excursion into Raman spectroscopy. Mike moved to the University of Michigan in 1969 and his interests soon shifted from electrochemistry to Raman spectroscopy. Since coming to Michigan, Mike has made many important contributions to biomedical spectroscopy and to biopolymer capillary electrophoresis. He has been honored with awards from the American Chemical Society, Society for Applied Spectroscopy, Anachem Society and by LSA and University of Michigan. He has presented named lectures at many universities. He serves

or has served on the editorial boards of several journals in analytical chemistry, applied spectroscopy, biomedical optics and skeletal structure and biochemistry. He edited the first monograph ever published on chemical imaging and he co-edited (with Pavel Matousek) a recently published monograph on biomedical and pharmaceutical applications of Raman spectroscopy. He has served the Chemistry Department in many capacities, including five years as Associate Chair for the Graduate Program.

Throughout his career Mike made important contributions to both the application of Raman spectroscopy and to spectroscopic instrumentation. He worked with several companies in Michigan and elsewhere on the use of Raman spectroscopy to solve problems in their product lines. On the technology side he developed

several methods for Raman spectroscopic imaging and was the first to use multivariate methods to extract information from Raman images. Mike is also one of the pioneers of coherent Raman spectroscopy. He was the first to demonstrate resonance enhanced stimulated Raman spectroscopy (then called inverse Raman spectroscopy) and the first to apply stimulated Raman spectroscopy to the study of highly fluorescent biomolecules, including flavins and bile pigments. More recently he developed methodology for non-invasive in vivo Raman spectroscopic imaging and has even demonstrated non-invasive Raman tomography.

Over the last decade Mike established Raman spectroscopy as an important tool in basic musculoskeletal science and musculoskeletal disorder diagnostics. Work in this area was featured in the cover story of the September 20, 2010 edition of Chemical and Engineering News (online: <http://pubs.acs.org/cen/coverstory/88/8838cover.html>). He works with several collaborators in the University of Michigan Medical

**Raoul Kopelman** started his professional career at Michigan working on solid state physical chemistry projects, including exciton and energy transport in perfect molecular crystals, with applications to artificial photosynthetic units, including dendrimer supermolecules (in collaboration with Dr. Jeff Moore, then at Michigan). The same work also resulted in making the first nanometer scale light source, based on anthracene nanocrystals. This led Kopelman to first define the term “nanophotonics” which has turned into a large area of research (and even a name of a journal). Based on nanophotonics Kopelman developed the first nanoscale optical chemical sensors, which evolved into nanoparticle sensors for biochemical investigations inside live cells, so called nano-PEBBLEs (Photonic Explorers for Biomedical use by Biologically Localized Embedding). This marked Kopelman’s plunge into Analytical Chemistry, making the world’s smallest sensors for many molecules, ions, and free radicals. At the same time similar optical nanosensors were made for measuring physical properties, such as electric field, viscosity, temperature, and magnetic properties. These sensors enabled discovery of cells under normal and stressed conditions,

School and School of Dentistry and with researchers in other institutions. They have used Raman spectroscopy in projects as diverse as evaluating the chemistry of tissue failure in bone fractures, elucidating the normal and pathological chemistry of bone mineralization and development of diagnostics for early stages of musculoskeletal system disorders. This research program has recently expanded into development of methods for monitoring development of tissue constructs for soft tissue replacement following oral surgery. His capillary electrophoresis program has focused on nucleic acid separations. His group showed how to do rapid (seconds to minutes) pulsed field capillary electrophoresis. Using high frame rate video microscopy they elucidated the different migration dynamics of single stranded, double stranded and supercoiled DNA. They also established that slow relaxation of the solutions of entangled linear polymers used as electrophoretic separation media caused the peculiar asymmetric shapes of DNA electrophoresis bands. Additionally, melding the themes of



for instance during internal changes due to bacterial infections or chemical toxins. This work has been important also in the context of national counter-pathogen programs. Basic advances in understanding the makeup of live cells were also made, such as a discovery of unexpectedly high electric fields throughout the cytosol. Kopelman’s next plunge was into medical applications of the above. He defined the concept of multi-functional targeted nanoparticles, for theranostics (combination of therapy and diagnostics). For instance the same nanoparticle applied for targeted chemotherapy, or photodynamic therapy, also enhanced the contrast of MRI or CT. Today many pharmaceutical companies are working on such theranostic medicines (“nanomedicines”). Presently Kopelman is collaborating with colleagues in neuro-

electrophoretic separations and Raman spectroscopy enabled the laboratory to be the first to do on-capillary Raman spectroscopic detection.

Mike has taught courses at every level of the graduate and undergraduate curricula and has participated in several undergraduate and graduate interdisciplinary courses. Several years ago he led a team that completely revised our introductory analytical chemistry laboratory and lecture courses. At the graduate level he developed and taught courses in analytical spectroscopy and instrumentation.

Mike has been happily married to Leslie Morris for many years. Together they raised four children - two sons and two daughters. Leslie has served multiple terms on the Ann Arbor City Council and remains active in local civic affairs. Mike and Leslie enjoy the landscape, food and art of the Pacific Northwest. They are frequent visitors to Portland, Oregon (where they met as college students), Seattle (where they were married), and the coastal towns of both Oregon and Washington.

surgery, oncology, neurotoxicology, and biomedical engineering on stratagems of improving brain tumor surgery, by visibly delineating its boundaries, and amplifying it with intraoperative photodynamic eradication of tumor leftovers. A paper on advances in effective treatment of ovarian tumors is in press (Cancer Research). Similar work is going on with colleagues in cardiology with the aim of alleviating arrhythmia. In work concerning bacterial infection, a University of Michigan spinout (“Life Magnetics”), led by Kopelman’s recent Ph.D. student Brandon McNaughton was formed this year and gained significant venture backing. It is based on an invention where cell magnetorotation is used to enable ultra rapid monitoring of bacterial antibiotic susceptibility (in hours vs. the days it takes now). This device is especially promising in view of the new strains of bacteria that are immune to most antibiotics.

Last year (just before the Obama stimulus programs) Kopelman testified in front of a congressional subcommittee, lobbying for increased funding of NIH. Over the last year Kopelman was invited to lecture at both the chemistry and physics institutes

of the Chinese Academy of Sciences. He gave the Iddles Award Lecture at the University of New Hampshire, gave the Plenary Lecture at the Inauguration of the Nanophotonic Institute at Duke

University. He has also been awarded the prestigious Pittcon Analytical Chemistry Award (to be presented in March 2011).

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## Graduate Program News

### Graduate Degrees - Masters & Ph.D

August 2009, December 2009, May 2010 & August 2010

#### Doctorates

Ryan James Casey Anna Mapp  
*Design and Synthesis of Non-Peptidic Transcription Factors.-*

Nicholas Ryan Deprez Melanie Sanford  
*Development of and Mechanistic Insights into Palladium-Catalyzed C-H Arylation Reactions.*

Jonathan Andrew Fritz John Wolfe  
*Pd-Catalyzed Carboamination Reactions for the Synthesis of Imidazolidin-2-ones and Related Heterocycles.*

Meng Guo Theodore Goodson III  
*Investigations of Novel High Dielectric Materials and New Mechanisms.*

John Timothy Henssler Adam Matzger  
*Structure-Property Relationships in Conjugated Oligomers Containing Thieno [3 2-b] thiophene and Thieno [3 2-b] furan.*

Marisa Louise Macnaughtan Marc Johnson/Adam Matzger  
*Ruthenium-Catalyzed Metathesis with Directly Functionalized Olefins.*

Khoi Tan Nguyen Zhan Chen  
*Studies of Interactions between Peptides/Proteins and Lipid Bilayers using Sum Frequency Generation Vibrational Spectroscopy.*

Jian Pei Robert Kennedy  
*High-throughput Chemical Analysis Using Capillary Electrophoresis and Electrospray Ionization Mass Spectrometry with Applications to Drug Screening.*

Miguel Jose Pereira Nils Walter  
*Single Molecule Characterization of the Varkud Satellite Ribozyme and Bulk Native Purification of Non-coding RNA.*

Kendra Rae Reid Robert Kennedy  
*Development and Application of Analytical Instrumentation for Monitoring Function of Islets of Langerhans.*

Kristin Noelle Schultz Robert Kennedy  
*Using Microdialysis Coupled On-Line to Capillary Electrophoresis to Study the Effects of Estradiol and Psychostimulants on Neurotransmitter Release.*

Dongxuan Shen Mark Meyerhoff  
*The Study of Apo-Enzymes/Prosthetic Groups and Their Applications in Chemical Analysis.*

Randon H Walker Mark Banaszak Holl  
*Silylene and Germylene Activation of Alkane, Ether and Amine C-H Bonds Mediated by an Aryl Halide. Observation of an Aryl Halide Kinetic Isotope Effect for the C-H Activation Reaction.*

Li Wang Gary Glick  
*Probing Lymphocyte Responses to Modulation of FOF1-ATPase by BZ-423.*

Lin Wang Mark Meyerhoff  
*Polymer Membrane Based Optical and Electrochemical Anion/Polyanion Sensors.*

Jesse Dylan Ward James Penner-Hahn  
*Applications of Synchrotron Radiation to the Structure, Localization, and Quantitation of Zinc in Biological Systems.*

Eric Scott Wiedner Marc Johnson/Melanie Sanford  
*Triple-Bond Metathesis with Group 6 Nitrido Complexes: The Importance of Ligand Identity and the Development of XXX Pincer Ligands.*

Susan Diane Wiedner Edwin Vedejs  
*Synthetic Studies toward Aziridinomitosenes and 9-Oxopyrrolo[1,2-a]indole Mitosanes Related to the Mitomycin and FR Heterocycles.*

Biyun Wu Mark Meyerhoff  
*Development of Hemocompatible Polymeric Materials for Blood-Contacting Medical Devices.*

Jun Yang Mark Meyerhoff/Omar Yaghi  
*Potential Anti-Thrombotic Nitric Oxide Generating Layer-By-Layer Assembly.*

Miri Yoon E Neil Marsh  
*Mechanistic Studies on AdoCbl-dependent Glutamate Mutase.*

#### Masters

Timothy Colin Berto  
Thaddeus Thomas Boron III  
Tanya Breault  
Jing Chen  
Kevin Hartman  
Aireal Diane Jenkins  
Alexander Edmund Johnson-Buck

Allison Rose Knauff  
Ramya Krishnan  
Kira Beth Landenberger  
Zhenxin Lin  
Xin Liu  
Sharon Rose Neufeldt  
Yuta Suzuki  
Melissa Lynn Zastrow  
Wen Zhou

## Graduate Awards

### Departmental Awards

**American Chemical Society Outstanding Graduate Student Award for Research and Teaching**  
Joseph Braymer (Lim)

**Alumni Fund Outstanding Graduate Student Research Award**

Nicholas Ball (Sanford)

**Robert and Carolyn Buzzard Graduate Chemistry Student Leadership Award**



Kevin Hartman (Ramamoorthy)

**Florence Fenwick Outstanding Graduate Student Instructor Award**  
Christopher Avery (Chen)

**Milton Tamres Outstanding Teaching Award**  
Cheryl Moy (McNeil)

## Training Grants

**Cellular Biotechnology Training Program (CBTP)**  
Kathryn Dooley (Morris)

**Chemistry-Biology Interface Training Program (CBI)**  
Christopher Taylor (Mapp)  
Melissa Zastrow (Pecoraro)

**Graduate Assistance in the Area of National Need (GAANN)**

Jameson Bothe (Al-Hashimi)  
Alaina Detoma (Lim)  
Vilmali Lopez-Mejias (Matzger)  
Cheryl Moy (McNeil)  
Joshua Neukom (Wolfe)  
Ross Putman (Matzger)  
Emily Salans (Wolfe)  
Danielle Schultz (Wolfe)  
Anne Vazquez (Chen)  
Francisco Vazquez (Geva)  
Amberlyn Wands (Mapp)

**Molecular Biophysics Training Program (MBTP)**  
Alexander Johnson-Buck (Walter)  
Stephanie Le Clair (Ramamoorthy/Chen)

**Pharmacological Sciences & Biorelated Chemistry Training Program (PSTP)**  
Grant Sormunen (Montgomery)

**Regenerative Sciences Training Grant**  
Kathryn Dooley (Morris)  
John-David McElderry (Morris)

**Training Program in Reproductive Endocrinology (RSP)**  
Gwendolyn Anderson (Kennedy)

**National Institutes of Health Pre-doctoral National Research Service Award**  
Nicholas Ball (Sanford)

## Departmental Fellowships

**George Ashworth Analytical Chemistry Fellowship**  
Hangtian Song (Hakansson)

**Robert W. Parry Award**  
Lauren Goodrich (Lehnert)

**Peter A.S. Smith Fellowship**  
Jennifer Schnobrich (Matzger)

**Margaret & Herman Sokol Graduate Summer Research Fellowship**  
Hasnain Malik (Montgomery)

**Winter Term Departmental Fellowships**

Seokhoon Ahn (Matzger)  
Jessica Anna (Kubarych)  
Timothy Berto (Lehnert)  
Zachary Buchan (Montgomery)  
Elizabeth Dethoff (Al-Hashimi)  
Deidra Gerlach (Coucovanis/Lehnert)  
Joseph Jankolovits (Pecoraro)  
Qiang Li (Kennedy)  
Jonas Locke (McNeil)  
Ravi Nanga (Ramamoorthy)  
Dustin Patterson (Marsh)  
Aleksandrs Prokofjevs (Vedejs)  
Amanda Ward (Wolfe)  
Yingda Ye (Sanford)  
Hyun Ju Yoo (Hakansson)  
Yueyang Zhong (Ruotolo)

## Non-Departmental Awards

**ACS Division of Analytical Chemistry Nine-Month Fellowship**  
Meng Wang (Kennedy)

**Eli Lilly Fellowship**  
Kara Stowers (Sanford)

**National Science Foundation Fellowship**  
Amanda Hickman (Sanford)  
Chelsea Huff (Sanford)  
Stephanie LeClair (Ramamoorthy)  
Amy Speelman (Lehnert)  
Erica Speelman (McNeil)

**National Science Foundation East Asia and Pacific Summer Institute Fellowship**  
Joseph Braymer (Lim)

**Novartis Graduate Fellowship in Organic Chemistry**

Georgia Lemen (Wolfe)

**Rackham Merit Fellowships and Science Awards**

Lindsay Amos (Zellers)  
Andrea Bell (Meyerhoff)  
Chun Chow (Matzger)  
Andrew Crawford (Fierke)  
Chelsea Huff (Sanford)  
Se Ryeon Lee (McNeil)  
Heidi Phillips (Dunietz/Geva)  
Jefferson Plegaria (Pecoraro)  
Mallory Van Dongen (Banaszak Holl)  
Anna Wagner (Sanford)

**Rackham One-Term Dissertation Fellowship**  
Ryan Baxter (Montgomery)  
Bo Wang (Hakansson)

## Vaughan Symposium (PECRUM) Awards - 2010

**Dow Chemical Oral Presentation Travel Award**  
Hasnain Malik (Montgomery)

**Oral Presentation Awards**  
Kira Landenberger (Matzger)  
Tim Berto (Lehnert)

## The Novartis Symposium

On August 12, 2010, the Department was fortunate to host our second annual Novartis Symposium. As with the previous symposium, the exciting day of science was a mix of poster presentations, student talks and seminars by outside speakers. Forty students and postdocs presented posters over a broad range of topics. As with last year the judging was extremely difficult due to the many exciting results and strong presenters, and the judges worked diligently throughout the afternoon to winnow down the field. While they did so, attendees enjoyed four outstanding talks. Kicking off the event was Dr. John Tallarico, the Head of Chemogenomics at the Novartis Institute of Biomedical Research with a seminar entitled 'Dissecting the fundamentals of disease using chemical genetics'. Dr. Tallarico's group at Novartis has been responsible for the discovery of a number of exciting small molecule bioactives, including a recent inhibitor of the Wnt signaling pathway, and the audience enjoyed hearing the details of the discovery process illuminated. Two student talks followed, with Nick Ball (Sanford group) providing an excellent account of his exciting progress in developed a method by which CF3 groups can be incorporated into small molecules using palladium as a catalyst. Chris Rath (Sherman group) detailed his multidisciplinary studies that have provided remarkable insight into the biosynthesis of the chemotherapeutic agent ET-743. The scientific talks closed with a keynote lecture from Professor Mo

**Poster Session Travel Awards**

**Analytical Cluster:**

Kee Scholten  
Thomas Slaney (Kennedy)  
Andrew Boughton (Chen)

**ChemBio Cluster:**

Joseph Yourey (Bartlett)  
Kristoffer Brandvold  
Shana Santos (Sollner)  
Saumen Chakraborty (Pecoraro)

**Organic Cluster:**

Nicholas Ball (Sanford)  
Wei Li (Montgomery)  
Sharon Neufeldt (Sanford)

**Physical Cluster:**

Heidi Phillips (Dunietz/Geva)  
Surma Talapatra (Geva)

**Materials Cluster:**

Kelsey King (McNeil)  
Erica Lanni (McNeil)  
Wen Wen (Maldonado)  
Jing Chen (McNeil)

**Inorganic Cluster:**

Amanda Hickman (Sanford)  
Matt Remy (Sanford)  
Melissa Zastrow (Pecoraro)  
Brannon Gary (Sanford)

Movassaghi of MIT who described his most recent successful forays into the total synthesis of alkaloid natural products. To conclude the event, Dr. Larry Hamann (PhD 1991, Koreeda) of Novartis announced the poster winners: Dr. Chinmay Majumdar, Erica Lanni and Alaina DeToima and Tom Lyons. We thank Novartis for their sponsorship of this wonderful event and look forward to it in the years to come.

### Kasimir Fajans Dissertation Award

On March 27, 2010 Dr. Katherine Plass received the Kasimir Fajans Award for the most outstanding dissertation for the years 2006-2007. Dr. Plass who is currently an assistant professor at Franklin and Marshall College in Lancaster, PA, delivered a lec-

ture on, "The Structure, Symmetry, and Stability of Two Dimensional Crystals." Dr. Stefan Fajans [Kasimir Fajans' son] and her mentor Professor Adam Matzger attended the Departmental reception given for Dr. Plass prior to the lecture. Her name has



*Dr. Katherine Plass, Dr. Stefan Fajans and Professor Adam Matzger at the reception.*

been placed on a bronze plaque on permanent display in the main conference room of the Chemistry Building.

## Undergraduate Program News

### Undergraduate Degrees

August 2009, December 2009, May 2010 & August 2010

#### Bachelor of Science. Biochemistry

Jared Babcock  
Nicholas Bailey  
Jeffrey Bqyar  
Charles Bunzey  
Melody Campbell  
Carol Chan  
Peter Chockley  
Gamtt Coyan  
Jennifer Cui  
Umair Daimee  
James David  
Leslie Demers  
Christopher Dion  
Jennifer Dolan  
Matthew DuPrie  
Nasir Fakhri  
Sarab Garnai  
Robert Gildersleeve  
Neetu Gulati  
Lauren Heath  
James Ignatz-Hoover  
Erin Kropp  
Jullia Lee  
Sora Lee

Ramsay Macdonald  
Kalev Maricq  
Shari Martin  
Christopher McHugh  
Zachary Miller  
Rebecca Minich  
Anders Nilsson  
Jordan Pecherer  
Matthew Pentis  
Robyn Pratt  
Ian Raxter  
Benjamin Root  
Jeremy Ruskin  
Konrad Sawicki  
David Schauder  
Lucy Shi  
Tamar Shrikian  
Eric Smith  
James Stewart  
Rachel Sullivan  
Kyle Terpak  
Ivy Tran  
Jing Yang  
Juno Yoo  
Grace Zhu

#### Bachelor of Science. Chemistry Concentration

Thomas Chae  
Christopher Chiles  
Madeleine Ewers  
Matthew Henderson  
Bradley Holden  
Andrew Parth  
Adam Runkle  
Bryan Tebeau  
Matthew Wall  
Miguel Wong

#### Bachelor of Science in Chemistry

Vivek Behera  
Ryan Bradstreet  
Mari Brunner  
Kenneth Chen  
Samantha Cummings  
Sara Edgar  
Siltia Escudero  
Matheus Falasa  
Danika Forgach  
Christina Galloway  
Matthew Gray

Qiyang Jin  
Matthew Kole  
Eric Kushion  
Lindsey Lapointe  
Thomas Lauzon II  
Jonathon Mahlow  
Kaitlin McLoughlin  
Christine Morrison  
Alexander Pagliaro  
Hyung Min Park  
Christopher Rumble  
Melanie Sabbagh  
Phillip Stratton  
Mary Tran  
Kristen Wiese  
Joshua Young

#### Bachelor of Science Chemistry Biochemistry Concentration

Vivek Behera  
Ryan Bradstreet  
Kenneth Chen  
Matthew Kole  
Jonathon Mahlow  
Mitlin McLoughlin

## Undergraduate Awards

#### CRC Outstanding Achievement Award

Nicole Stegmeier

#### Alpha Chi Sigma Outstanding 1st Year Student Award

Holly Williams

#### Alumni 1st Year Achievement Awards Kevin Joseph

Benjamin Levin, Shai Madjar, Anna Maurer, Connie Shi

### Summer Research Awards

#### Seyhan Ege Undergraduate Research Fellowships

Chloe Bass (Nichols/Fierke), Joshua Bornstein (Garneau-Tsodikova), Daniel Camacho (Matzger)



### James E. Harris Scholarship

Azhar Carim (Maldonado), Eric Chen (Bochar), Rebecca Chota (Koreeda), Aaron Goodman (Bartlett), Christopher Grondin (Glick), Kimberly Haupt (Walter)

### Novartis Undergraduate Research Fellowships

Melissa Hoffman (Lehnert), Dorota Marchel (Marsh)

### PPG Undergraduate Awards

Austin McHenry (Ramamoorthy), Khalil Mroue (Walter)

### William G. Smeaton Memorial Awards

Samer Salamekh (Ramamoorthy), Kamy Sankar (Goldstrohm), Erica Saunders (Lei)

### Margaret & Herman Sokol Endowment Awards

Jesse Song (Carroll), Christina Suh (Pecoraro), Britt Wedenoja (Matzger), Brittany Worley (Meyerhoff)

### Division of Organic Chemistry of the American Chemical Society 2010 Summer Undergraduate Research Fellowship

Anthony Grillo (Koreeda)

### Alumni Outstanding Awards

2nd Year Student, Joel Hrit  
3rd Year Students, Michael Kheir, Samer Salamekh, Christina Suh  
Senior Year Student, James Ignatz-Hoover  
Honors College Vanko Award, Vivek Behera

### Huron Valley Section of the American Chemical Society- Outstanding Student Leadership Award

Jonathon Mahlow

### American Chemical Society Analytical Chemistry Awards

Aaron Goodman

### Seyhan N. Ege-WISE Award

Sarah Garnai

### Merck Index Awards to Outstanding Seniors

Kareem Alazem, Jennifer Cui, Kaitlin McLoughlin, Konrad Sawicki, Elizabeth Shy

### American Institute of Chemists Biochemistry Award

James David

### American Institute of Chemists Chemistry Award

Christine Morrison

## Undergraduate Programs

### University of Michigan Research Experiences for Undergraduates Site in Chemistry

Each summer, since 1989, ten students from around the United States make up the University of Michigan REU Site in the Chemical Sciences. These REU students will join the chemistry department's active undergraduate research cohort of 60-70 local and international students

in a 10-week program of research and professional development. REU participants are recruited nationally, with an intentional, strategic emphasis on building a cohort that



represents diverse backgrounds, settings, and experiences. Our assessment program shows that their experience in the department contributes greatly to students' confidence to pursue graduate studies, and to their ability to make an informed decision about choosing scientific careers. We have tracked, at least in part, 195/214, or 91%, of the students from 1989-2010. Of these 214 students, 66+ have their Ph.D. degrees, 18+ have M.S. degrees, 25+ are currently attending graduate school, 55+ at least earned the B.S. (with 30+ in industry), 9+ obtained their MD, DDS or JD, and 14 are still undergraduates. To date, 139/214 (65%) of our REU participants have been women, and 71/214 have been underrepresented minority students (33%). More information about the program can be found at <http://www.umich.edu/~reuchem/>

### International Summer Undergraduate Research Exchange with China

In 2007, the University of Michigan Chemistry Department created the first truly bilateral undergraduate research exchange program, in the sciences, between China and the United States. Starting then with a pilot project, with seven total students, the program has grown, in 2010, to include 50 students per year (25 in each direction). Using partial funding from the National Science Foundation, many of the US-to-China positions within the existing UM program are completely open to students from around the US. US students are placed in research groups in the chemical and biological sciences at Peking and Tsinghua Universities, in Beijing, arguably the two premier research institutions in China. Additional funding has come from the universities, from their faculty and donors, and from Pfizer Global R&D. While productive research in both countries is certainly the most tangible outcome, an equally significant result is the increased sense of global and international confidence experienced by these students, who have fully integrated these experiences as a natural part of their



PKU students, Summer 2010

undergraduate education. Above all, the program is concerned with providing all of its students with a quality education and a vision of a world with far fewer boundaries and limitations than any previous generation. Information about the program can be found at <http://www.umich.edu/~michechem/UMPKU/>



## Gifts

Contributions from private and corporate donors received from July 1, 2009 – June 30, 2010

### Chairman's Discretionary Fund - Chemistry

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Antone L. Lott  
Edwin & Roberta Przybylowicz Fund  
Jack Sweet  
Howard H. Un

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Graham Deuer Stewart  
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ACS Organic Division  
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Timothy F. Merkel and Theresa Marano Merkel  
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Sheldon D. Gerson and Marilyn A. Gerson  
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#### **Chemistry, Pres Challenge for Grad Support**

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#### **Howard T. & Virginia M. Siefen Chemistry Fellowship**

Howard T. Siefen Estate

#### **Kent P. Lanini Memorial Library**

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#### **Milton Tamres Teaching Award**

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Karen W. Morse and Joseph Grant Morse  
Bonnie Pauly Paine and Robert Treat Paine

#### **Peter A.S. Smith Fellowship**

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William Lee Berry and Jean C. Berry  
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Roxanne M. Drnevich and Vincent Paul Drnevich  
Harry Alfred Dugger and Elisabeth Dugger  
David W. Emerson and Shirley A. Emerson  
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Richard N. Loeppky  
Cecil Robert Lubitz  
Calvin Roman Messing  
Judith Ann Pointer and Roy Dewain Pointer  
Joanne and Jerry Robertson Fund at Gulf Coast Community Foundation  
Dorothy E. Rowe and Charles David Rowe  
Joseph Glenn Wirth and Michael M. Wirth

#### **Pfizer Undergrad. Summer Fellowship in Organic Chemistry**

Pfizer International Inc.

#### **Robert & Carolyn Buzzard Grad Chem Student Leadership**

Robert A. Buzzard and Carolyn Buzzard

#### **Robert Kuczowski Faculty Award**

Carol Ann Fierke  
Robert L. Kuczowski and Ann E. Kuczowski  
Robert M. Stewart Trust (Estate)

#### **Seyhan N. Ege Junior Faculty Development Award**

Marjorie L. Clary Carter and Donald Joe Carter  
Estate of Seyhan N. Ege  
Gerald David Fong and Day-Lih Tung  
Rebecca Jo Parker and David Ralph Parker

#### **Univ. of Michigan and Peking Univ. Student Exchange**

Pfizer, Incorporated

#### **Werner E. Bachmann Memorial Lecture Fund**

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#### **Other Support**

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## Alumni News

E-Mail your news: [chem.alum@umich.edu](mailto:chem.alum@umich.edu)

Update your contact information: <http://www.umich.edu/~michchem/alumni/>

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, creep in. Corrections can easily be inserted in the next edition.

**Saleem A. Al-Ahmad** (PhD 1990, Dimitri Coucouvanis) has been promoted to Managing Director at Lubrizol Transarabian Co. Ltd in Jeddah, Saudi Arabia. In August he visited Ann Arbor with his daughters Reem and Mayada.

**Peter (PJ) Alaimo** (BS 1994, PhD 1999 UC Berkeley) has been promoted to Associate Professor with tenure at Seattle University, WA.

**Norman P. Arends** (BS 1967) writes that he is happily retired in the Brittany region of France.

**Leonidas Bachas** (PhD 1986, Mark Meyerhoff) became Dean of the College of Arts and Sciences at the University of Miami (Coral Gables, FL) in July. Dr. Bachas had previously been on the faculty of the University of Kentucky (1986-2010). Most recently he was the

Frank J. Derbyshire Professor of Chemistry and the Chairman of the Department of Chemistry at UK.

**Lowell O. Bird** (BS 1954, MBA 1958) is retired from Goodyear Tire Company. He writes that in 2008-9 he was offered and accepted a temporary position in a chemical engineering laboratory. The job involved nanofibers which had not even been dreamed about in 1954. He found the job exhilarating. But he observed that his coworkers had trouble comprehending that he had graduated more than 54 years earlier.

**Kerryn Brandt** (PhD 1984, Charles Overberger) is now at Dow Chemical Co. since their acquisition of Rohm and Haas last year. He and his wife Laura have a daughter Carolyn who just started her senior year of high school. Kerryn writes, "that three Overberger PhD's got together with their

families in Ann Arbor in August 27-29. The group included **Kartar Arora** (PhD 1984) and **Richard Tomko** (PhD 1982). We visited the Chemistry Building (Mark Meyerhoff gave us a wonderful tour on Saturday morning), went to the annual Macro picnic in Gallup park, and toured around campus and some of our favorite spots in town, including dinner at the Cottage Inn.



*Kartar Arora, Kerryn Brant, Betty Overberger and Richard Tomko*



Most importantly, Betty Overberger hosted us for a brunch on Sunday. She would love to see more former Overberger group members.”

**Brian Brennan** (BS 2003, PhD 2007, Anna Mapp) is an Assistant Professor of Chemistry at Illinois Wesleyan University.

**Richard J. Cook** (BS 1969, PhD 1973 Princeton) retired as president of Allegheny College in July 2008 after twelve years in that office. Allegheny College awarded him the Alumni Metal, honorary Alumnus Status and the degree of Doctor of Humane Letters, *Honoris Causa*. He is currently a presidential fellow with Second Nature and an independent consultant in leadership.

**David W. Emerson** (PhD 1958, Peter Smith) is now a Professor of Chemistry Emeritus at the University of Nevada at Las Vegas. He remains active in research and continues to mentor undergraduates in research projects. In 2009 he received the Donna Weistrop Career Achievement Award in the UNLV College of Sciences.

**Amelia Fuller** (PhD 2006, Anna Mapp) is currently Clare Boothe Luce Assistant Professor at Santa Clara University, Santa Clara, CA. She was recently awarded a Research Innovation Award from the Research Corporation and a Camille and Henry Dreyfus Foundation Faculty Start-up Award.

**John Gladysz** (BS 1971, PhD 1974 Stanford) has been appointed Editor in Chief of the ACS journal *Organometallics*.

**Kerry W. Hipps** (Postdoctoral 1977-79, Anthony Francis) is a Professor of Chemistry and Material Science at Washington State University. He was recently named as a 2010 ACS Fellow.

**Morton Z. Hoffman** (PhD 1960, Richard Bernstein) was elected to the inaugural group (2009) of Fellows of the American Chemical Society. He is a Professor Emeritus of Chemistry at Boston University. He is also a Fellow for the American Association for the Advancement of Science (AAAS). Professor Hoffman serves as a Councilor for the Northeastern Section of the ACS and has been Chair of the Division of Chemical Education of the ACS.

**Elizabeth Irwin** (MS 1967, MD 1979 UCLA) worked at UCLA in mass spectroscopy prior to attending medical school. She had a private practice in OB/GYN before her retirement in 2007. She now spends

her time travelling and living in both the south of France and southern California.

**Neil Law** (PhD 1999, Vincent Pecoraro) is a faculty member at St. Lawrence University, NY. He recently spent a sabbatical leave working in Professor Pecoraro’s laboratory.

**Richard N. Loeppky** (PhD 1963, Peter Smith) has received the Founders Award from the Division of Chemical Toxicology of the ACS at its meeting in Boston in August 2010. He was also in the inaugural class of ACS Fellows in 2009. Professor Loeppky retired from a professorship at the University of Missouri after 40 years of service. He now resides in the Seattle area.

**Justin Lomont** (BS 2009) has been awarded an NSF Graduate Fellowship. He is attending UC Berkeley where he is working with Professor Charles Harris.

**James MacKay** (PhD 2004, Edwin Vedejs) was an American Cancer Society postdoctoral fellow with Professor Viresh Rawal at the University of Chicago. Since 2007 he has been an Assistant Professor at Elizabethtown College in Elizabethtown, PA.

**Katie R. Mitchell-Koch** (MS 2005, PhD 2008 U. Kansas) has been teaching part-time and doing postdoctoral research at Emporia State University, Emporia, KS. She and her husband Jeremy have a daughter Molly Rachel who was born in May 2008.

**Christine Morrison** (BS 2010) has been awarded a Fulbright Fellowship which has allowed her to do research at the Karlsruhe University (Germany).

She has also been awarded an NSF Graduate Fellowship and expects to enroll at the California Institute of Technology next year.

**Thomas J. Pacansky** (PhD 1972, Charles Overberger) has been named a 2010 ACS Fellow and a 2010 ACS Polymer Division Founding Fellow. He had previously received an ACS Polymer Division Distinguished Service Award in 2005. Tom has served as a scientist and high-level technology manager with Xerox and Exxon Mobil. He is now the President of Appollo Ventures, LLC in Watchung, NJ.

**Jun Pan** (PhD 2007, Arthur Ashe) is now a postdoctoral fellow at MIT where he is working with Professor Stephen Buchwald.

**Jason K. Pontrello** (BS 1998, PhD U. Wisconsin) is currently an Assistant Professor of Chemistry at Brandeis University in Waltham, MA.

**Nick Preketes** (BS 2008) has been received a NSF Graduate Fellowship. He is attending UC Irvine.

**Douglas J. Raber** (PhD 1968, Richard Lawton) was honored as a 2010 ACS Fellow. He writes about his recent activities,” After leaving the National Research Council in 2003, I spent several years as a science-policy consultant, doing studies and writing reports for non-profits such as the ACS and the Chemical Heritage Foundation. Then, an interesting twist began. My wife Linda (a longtime editor at *Chemical and Engineering News*) had developed an idea for a novel about bioterrorism. But her day job didn’t leave much time to write, so she asked me to draft a chapter for her to edit. She liked the results, and we’re now on the third book of collaboration (all in the ‘thriller-terrorism’ genre with underlying science themes). I use the word ‘book’ advisedly, however, since this is said to be the worst time in recorded history to break into fiction as a new author. Getting something published in the fiction arena is a whole lot more difficult than anything I ever experienced in chemistry. Nevertheless, it has been an entirely enjoyable experience, and we shall persevere.”

**Lidaris San Miguel Rivera** (PhD 2008, Adam Matzger) and **Adam Grzesiak** (PhD 2007, Adam Matzger) are both at the Dow Chemical Company in Midland, MI. They had a son last year and are now expecting the birth of their second child.

**Todd Senecal** (BS 2006) is a chemistry graduate student at MIT where he is working with Professor Stephen Buchwald. He recently published his first graduate paper in *Science*.

**Jim Tchobanoff** (BS 1968, MA (Library Science) 1971) was recently awarded the 2010 John Cotton Dana Award by the Special Library Association. The award recognizes a lifetime of exceptional service to the information profession. Jim worked for the Pillsbury Company for 24 years. He currently runs an independent library and management consulting business in Arden Hills, MN.

**James Zimmerman** (PhD 1999, Henry Griffin) has been appointed as the Director of the Christian A. Johnson Institute for Effective Teaching at Rollins College, Winter Park, FL.

## In Memoriam

We are saddened to announce the deaths of the following faculty, alumni, alumnae and friends of the Department.

**Howard M. Dess** (PhD 1955, Robert Parry) died in New York, NY on June 6, 2010 at the age of 81. Dr. Dess was born in Chicago and earned a BS in chemistry from Indiana University in 1951. After receiving his PhD in inorganic chemistry with Parry, he was employed as a research chemist with the Electrometal Company, Pennsalt Chemical Corporation and Union Carbide Corporation. At Union Carbide he became a director of research within the Metallurgical and the Linde Divisions. He was an expert on crystal growth. In 1986 he earned a masters degree in library science from Rutgers University (New Brunswick, NJ). He became a Professor of Library Science at Rutgers and ultimately on his retirement Professor Emeritus of Library Science. He is survived by his wife Irene, two sons, a daughter and three grandchildren.

**Robert E. Gilman** (PhD 1958, Robert Elderfield) died on February 2, 2010 at the age of 78. Dr. Gilman obtained a BS from Dartmouth College and his PhD in organic chemistry at Michigan. He then worked for WR Grace in Clarksville, MD and as a postdoctoral fellow from 1960-62 at the National Research Council of Canada in Ottawa. He also taught at Williams College in Williamstown, MA prior to joining the faculty of the Rochester Institute of Technology (Rochester, NY) in

1964. In 1966 he became the first recipient of the Eisenhart Award for Distinguished Young Teachers. Professor Gilman served as the head of the Chemistry Department 1972-79. In 1970 and again in 1980 he was a visiting scholar at UCLA where he worked in the laboratory of Professor Donald Cram. He retired from RIT in 1994 and subsequently moved to Los Angeles. He was interested in music and served on the board of the Opera League of Los Angeles and as Controller of the Long Beach Opera.

**Annabel Muentzer** (BS 1966, Dunn, PhD 1972, Harvard) passed away on May 17, 2010 at the age of 65. After receiving her PhD she moved to Rochester, NY where she worked for 35 years as a Photographic Scientist for the Eastman Kodak Company. She leaves her husband John, daughter Annabel Edwards and a grandson, Corey.

**Howard T. Siefen** (BS 1940, PhD 1944, Werner Bachmann) died on August 22, 2009. Dr. Siefen was a 1936 graduate of Jackson (MI) High School. He attended Jackson Junior College for two years before transferring to the University. In December of 1943 he joined the DuPont Company where he would spend the next 34 years. One of his initial projects at DuPont was

part of the Manhattan project. He recalled years later that they were only allowed to refer to the uranium as X-metal. He was employed in Cleveland until 1949, when he was transferred to LaPorte, TX. He observed that his job involved more chemical engineering than chemistry. He retired from DuPont in 1982. Dr. Siefen and his wife have generously left a bequest to the University to establish the Howard T. and Virginia M. Siefen Chemistry Fellowship Fund.

**Clark G. Spike** (PhD 1953, Robert Parry) died in Manchester, MI on May 7, 2010 at the age of 88. Dr. Spike graduated with BS from Michigan State Normal College (now Eastern Michigan University) in 1944. After obtaining his PhD in Inorganic Chemistry with Parry, he was employed as a research chemist with the Ethyl Corporation, 1952-58. He joined Eastern Michigan University as an Associate Professor of Chemistry in 1958 and was promoted to full Professor in 1961. At EMU Professor Clark served as Department Head 1961-1977, Interim Dean of the College of Arts & Sciences 1977-79 and as Acting Associate Vice President for Academic Affairs 1979-80. On his retirement in 1983 he became Professor Emeritus of Chemistry.

## The Robert C. Taylor Fund

September 27, 2011 will mark the tenth anniversary of Bob Taylor's death. In order to commemorate Bob's many contributions to the Chemistry Department, a group of his friends and former students have established the Robert C. Taylor Fund, an endowment for graduate student support in the Chemistry Department at the University.

Bob Taylor joined the faculty of the Chemistry Department in 1949, where he served until his retirement in 1987. From 1967-1986 he was associate chairman, working with three successive chairs. During this time he regularly taught the physical chemistry course required of all

chemistry majors. As associate chair he assigned all graduate student instructors and processed fellowship and research assistant appointments. Over these years he came to know virtually every student in the Department. [A complete obituary was published in the 2001-02 Chemistry Newsletter which may be found at the Departmental website. <http://www.umich.edu/~michchem/alumni>]

The Robert C. Taylor Fund constitutes a gift for endowment, and distributions from it shall be made in accordance with the University's then existing endowment distribution policy. If you would like to support this fund, you may do so checking the appropriate box on the attached gift card and returning it to us. If you have any

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## Faculty

**Hashim M. Al-Hashimi**, Professor of Chemistry; Professor, Biophysics. *Chemical Biology*.

**Philip Andrews**, Professor of Biological Chemistry, Chemistry, Comp Med & Biology, Medical School and Director MLSC-Core Tech Alliance Proteomics Center. *Bioanalytical Chemistry*

**Mark M. Banaszak Holl**, Professor of Chemistry; Professor, Macromolecular Science & Engineering. *Synthetic and Mechanistic Solution, Surface, and Solid State Chemistry*.

**Bart M. Bartlett**, Assistant Professor of Chemistry *Inorganic, Materials Chemistry*.

**Julie S. Biteen**, Assistant Professor of Chemistry. *Physical and Biophysical Chemistry*

**Charles L. Brooks III**, Warner-Lambert/Parke-Davis Professor of Chemistry and Biophysics, *Physical Chemistry/Biophysical Chemistry/Theoretical and Computational Chemistry and Biophysics*.

**Heather A. Carlson**, Associate Professor of Medicinal Chemistry; Associate Professor, Chemistry, *Computational Chemistry, Drug Design, Theoretical Biophysics*

**Mary Anne Carroll**, Professor of Atmospheric, Oceanic and Space Sciences; Professor, Chemistry. *Atmospheric Chemistry*.

**Zhan Chen**, Professor of Chemistry; Professor, Macromolecular Science & Engineering. *Biomaterial and Polymer Surface, Biocompatibility*.

**Mary Sue Coleman**, UM President and Professor of Chemistry

**Brian P. Coppola**, Arthur F. Thurnau Professor of Chemistry; Associate Chair for Undergraduate Chemistry. *Organic Chemistry. Science Learning and Instructional Methods*.

**Barry Dunietz**, Assistant Professor of Chemistry. *Theoretical and Computational Chemistry*

**Carola A. Fierke**, Chair. Jerome and Isabella Karle Collegiate Professor of Chemistry; Professor, Biological Chemistry. *Chemical Biology, Bioinorganic Chemistry*.

**Anthony H. Francis**, Arthur F. Thurnau Professor of Chemistry; Associate Dean, LS&A. *Magnetic Resonance, Vibrational and Electronic Spectroscopy of Materials*.

**Eitan Geva**, Professor of Chemistry. *Theoretical and Computational Chemistry*.

**Gary D. Glick**, Werner E. Bachmann Collegiate Professor of Chemistry; Professor, Biological Chemistry. *Chemical Biology, Bioorganic Chemistry, Molecular Recognition*.

**Theodore Goodson, III**, Richard Barry Bernstein Collegiate Professor of Chemistry; Professor, Macromolecular Science & Engineering. *Physical Chemistry*

**Amy Gottfried**, Lecturer III.

**Kristina Hakansson**, Associate Professor of Chemistry. *Analytical Chemistry*.

**Robert T. Kennedy**, Hobart H. Willard Collegiate Professor of Chemistry; Professor, Pharmacology. *Analytical Chemistry*.

**Nancy K. Kerner**, Lecturer IV. *Chemical Education, Learning and Instructional Methods*.

**Raoul Kopelman**, Richard Smalley University Professor of Chemistry; Professor, Biomedical Engineering; Professor, Physics. *Analytical/Physical/Biophysical Chemistry*.

**Masato Koreeda**, Professor of Chemistry; Professor, Medicinal Chemistry. *Synthesis of Natural Products, Small Molecule-DNA Interaction, Chemical Carcinogenesis, Glycobiology*.

**Kevin Kubarych**, Assistant Professor of Chemistry. *Physical and Biophysical Chemistry*

**Kenichi Kuroda**, Assistant Professor of Dentistry, Biologic & Materials Sciences, Biomedical Engr., and Chemistry. *Physical Chemistry*

**Nicolai Lehnert**, Dow Corning Assistant Professor. *Bioinorganic Chemistry, Physical Inorganic Chemistry*

**Mi Hee Lim**, Assistant Professor of Chemistry; Research Assistant Professor, Life Sciences Institute. *Bioinorganic, Medicinal Chemistry, Chemical Biology*.

**David M. Lubman**, Maude T Lane Professor of Surgical Immunology; Professor, Surgery; Pathology; Professor, Chemistry. *Biological Mass Spectrometry, Spectroscopy and Instrumentation*.

**Stephen Maldonado**, Assistant Professor of Chemistry *Electrochemistry, Materials Chemistry*.

**Anna K. Mapp**, Professor of Chemistry; Professor, Medicinal Chemistry. *Organic Chemistry, Chemical Biology, New Synthetic Methods*.

**E. Neil G. Marsh**, Professor of Chemistry; Associate Professor, Biological Chemistry. *Chemical Biology, Enzymes, Structure, Mechanism and Specificity; Protein Engineering and Molecular Recognition*.

**Adam J. Matzger**, Professor of Chemistry; Professor, Macromolecular Science & Engineering. *Organic, Polymers/Organic Materials*.

**Anne J. McNeil**, Assistant Professor of Chemistry. *Polymer and Organic/Materials Chemistry*,

**Mark E. Meyerhoff**, Philip J. Elving Collegiate Professor. *Bioanalytical Chemistry, Electrochemical and Optical Sensors*.

**John Montgomery**, Professor of Chemistry. *Organic and Organometallic Chemistry*

**Michael D. Morris**, Richard D. Sacks Collegiate Professor of Chemistry. *Analytical Laser Spectroscopy and Imaging; Electrophoretic Separations*.

**Pavel Nagorny**, Assistant Professor of Chemistry. *Organic Chemistry*

**Kathleen V. Nolte**, Lecturer IV. *Organic Biochemistry*.

**Vincent L. Pecoraro**, John T. Groves Collegiate Professor of Chemistry. *Synthetic Inorganic and Bioinorganic Chemistry*.

**James E. Penner-Hahn**, Professor of Chemistry; Professor, Biophysics. Associate Dean, LSA. *Biophysical Chemistry and Inorganic Spectroscopy*.

**A. Ramamoorthy**, Professor of Chemistry; Associate Professor, Biophysics. *Structural Studies of Biological Molecules*.

**Brandon Routolo**, Assistant Professor of Chemistry, *Analytical Chemistry*.

**Melanie Sanford**, Professor of Chemistry, *Organometallic Chemistry*.

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**David H. Sherman**, Hans W. Vahlteich Professor of Medicinal Chemistry; Professor, Microbiology and Immunology; Professor, Chemistry; Research Professor, Life Sciences Institute. *Medicinal Chemistry*

**Jadwiga Sipowska**, Lecturer IV. *General Chemistry*

**Nathaniel Szymczak**, Assistant Professor of Chemistry. *Energy Science, Inorganic Chemistry*

**Edwin Vedejs**, Moses Gomberg Collegiate Professor of Chemistry. *Organic Chemistry*.

**Nils G. Walter**, Professor of Chemistry; Associate Research Scientist, Biophysics Research Division. *Chemical Biology*.

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