



COLLEGE OF
ARTS AND SCIENCES

CASE WESTERN RESERVE
UNIVERSITY

IN THIS ISSUE

- 1 From the Corner Office
- 3 Distinguished Alum
- 4 New Faces
- 5 Faculty Highlight
- 6 Faculty Awards
- 7 Alum Updates
- 10 In Memoriam
- Department Support

Department Chair
Mary D. Barkley

Associate Chair
John D. Protasiewicz

Managing Editor
James D. Burgess

Production Editor
Brian W. Brauchler

Department of Chemistry
Case Western Reserve University
10900 Euclid Avenue
Cleveland OH 44106-7078
www.case.edu/chem/

james.burgess@case.edu
216.368.4490

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THE CASE CHEMIST

News from the Chemistry Department at Case Western Reserve University

FROM THE CORNER OFFICE

INTERDISCIPLINARY ALLIANCES

This year marked the rollout of the Interdisciplinary Alliances created by Provost Bud Baeslack to implement the University's strategic plan. The Institute for Advanced Materials (IAM) was established with Professor Stuart Rowan in the Macromolecular Science & Engineering Department as the first director. **John Protasiewicz** and **Clemens Burda** in Chemistry serve on the steering committee of IAM.

The Solar Energy and Optoelectronic Materials Laboratory (SEOEM) is under construction in the White building on the Case quad with funding from both the Advanced Materials and Energy Alliances. SEOEM was developed by an interdisciplinary team of faculty, including Ken Singer, Kathleen Kash, and Xuan Guo in Physics, Liming Dai in Chemical Engineering, and **Geneviève Sauvé** in our department.

Dr. Ina Martin



Mary Barkley, Chair

joined Case Western Reserve University in August as director of SEOEM after postdoctoral work at the National Renewable Energy Laboratory (NREL). Geneviève will be making extensive use of this facility to fabricate organic solar cells.

SUSTAINABILITY

Speaking of energy, the campus is going green in a big way and the signs are visible across campus. LED lights are being installed in elevators, stairwells, and building entrances. Three wind turbines of different sizes will be built on or near campus with funding from the Ohio Third Frontier and industry partners.

The first has been constructed near our building on Adelbert Road between the Veale Parking Garage and 1-2-1 Fitness Center. Recycling bins for paper, plastic, and glass are everywhere. White electric vehicles are replacing gas-powered vehicles for Facilities Services and Security. Even the campus food service provider Bon Appétit has gotten into the act with an Eat Local program, including some food grown at the University Farm.

Three Chemistry faculty have research programs in renewable energy and sustainability: **Dan Scherson**, **Thomas Gray**, and **Geneviève Sauvé**.

UNIVERSITY FINANCIAL UPDATE

President Barbara Snyder has brought financial stability to Case Western Reserve University, despite a disappointingly slow recovery of the national economy. The 2010 fiscal year was the third year in a row of modest budget surpluses. Fundraising again posted the second

highest total in our history, marking three straight years above \$100 million and our highest total ever — \$8 million — for the annual fund. We thank you for your amazing generosity, which together with fiscal restraint spared the University the draconian cuts experienced by many institutions of higher education.

COMINGS AND GOINGS

This year we welcomed a new Assistant Professor, **Anna Samia**. Anna adds critical mass to our second research thrust, Energy & Materials. You can read about Anna and her exciting research program on pages 4-5 of this newsletter. Incidentally, Anna is the wife of **Clemens Burda**, so Anna and Clemens are the first faculty couple ever in the department.

We also celebrated a faculty promotion and two appointments to endowed chairs: **Thomas Gray** was promoted to Associate Professor with tenure, **Bob Salomon** was appointed to the Charles Frederic Mabery Professorship of Research in Chemistry, and **Dan Scherson** was appointed to the Frank Hovorka Professorship in Chemistry. We congratulate Thomas, Bob, and Dan on their accomplishments.



Robert Salomon



Daniel Scherson

Professor **Ormond Braithwaite** is spending a one-year sabbatical leave in **Raj Viswanathan**'s group. Ormond is Associate Professor of Chemistry and Biology at Cuyahoga Community College, East Branch. He also teaches summer courses in our department. Lecturer and former graduate student **Johnathan Tedesco** departed at the end of the summer term for an Assistant Professor position at Lake Erie College. Fortunately, **Thomas Robilotto**, a fresh PhD from Thomas Gray's group, took over as lecturer for the 2010–2011 academic year.

Rekha Srinivasan received the Carl F. Wittke Award for Distinguished Undergraduate Teaching at Commencement in May 2010. Two Wittke Awardees are selected each year by a student committee. Rekha has done a superlative job for several years teaching the organic chemistry lab course to over 250 students per semester. You can read more about Rekha and her award-winning teaching on pages 6-7. Besides honoring Rekha, the Wittke Award confers bragging rights to Chemistry for the outstanding undergraduate teaching done in our department.

NEW CHEMICAL BIOLOGY PROGRAM
Now our most exciting news. The department is about to launch a new undergraduate major in Chemical Biology. This is a milestone in our chemistry curriculum. Case Western Reserve University will be only the second school in the country and the
(continued on page 4)

2010 Distinguished Alum



William H. Powell

Our recipient of the 2010 Distinguished Alumnus Award was **William H. Powell**, BA '67 (chemistry), MS '70 (chemical engineering). He is Chairman of the Board for the Granite Construction Company and former CEO of National Starch and Chemical Company. He has been associated with many boards across six different industries. In his Award talk, he advised students to build breadth of knowledge, find an academic "sweet spot", embrace curiosity, energy, and passion for work, fulfill an obligation to society and self, and never accept limitations. In addition, he strongly advocated taking advantage of the museums, theaters, and other cultural venues of University Circle.

first research university to offer a baccalaureate degree in Chemical Biology. This new major aligns our curriculum with a longstanding research emphasis in the department and with one of the two research thrusts identified in our strategic plan. Our Undergraduate Affairs Committee, chaired by **Mike Kenney**, developed the new major. The planning process stimulated many lively discussions among our faculty about educating future chemists and professionals.

The new major will feature four one-semester foundation courses in organic chemistry, analytical chemistry, chemical biology, and physical chemistry and a one-year course in biology. Planning is nearing completion and we hope to receive approval for the new major by Spring 2011, so that current first-year students can declare Chemical Biology majors. Of course, we will continue to offer our traditional chemistry B.A. and B.S degrees, but stay tuned for changes based on new American Chemical Society guidelines.

OTHER NEWS

Hopefully, you saw a news blurb about the inaugural USA Science & Engineering Festival held on the National Mall in Washington, D.C. at the end of October. You probably do not know that **Mike Kenney** took 30 students from Case Western Reserve University and eight students from Design Lab Early College High School to Washington to staff four University-sponsored booths. The chemistry booth attracted 5,000 visitors, including Bill Nye The Science

Guy. Members of both the chemistry society Alpha Chi Sigma and the group Education Theater helped visitors set off rockets made from recycled film canisters, vinegar, and baking soda. The students had a fantastic time interacting with children and parents, and are already planning a project for next year.

Three years ago, **Greg Tochtrop** inaugurated a graduate student retreat for all students, postdocs, and faculty in the department. This day-long retreat, held in October in the Sheep Barn at the University Farm, was so successful that it has become an annual event. Graduate students in their fourth year give short talks on their dissertation research projects. These presentations serve a dual purpose, providing advanced graduate students a venue to practice giving scientific talks and the rest of us an opportunity to learn about ongoing research projects in the department.

NEW FACES

Anna Cristina S. Samia joined the department as an Assistant Professor in August 2010. Raised in Manila, Philippines, she earned her undergraduate degree from the University of the Philippines-Diliman campus. She then moved to GaTech and did her graduate work with Prof. Z. John Zhang. Anna's thesis work involved studies of the superparamagnetic properties of cobalt ferrite nanoparticles

and the development of a chemometric model for nanoparticle synthesis. After GaTech, she spent some time at Argonne National Laboratory under the direction of Dr. Xiao-Min Lin at the Center for Nanoscale Materials (CNM), before joining Dean Pamela Davis's group at the School of Medicine at CWRU, where she worked on the development of nanoprobes for the in vivo imaging of gene therapeutic agents.

Her research at CWRU is directed toward developing nanoalloys and metal oxide hetero-nanostructures for energy

and biomedical applications. Anna seeks to develop lower-cost materials for efficient photo- and electro-catalytic applications and bio-imaging applications.

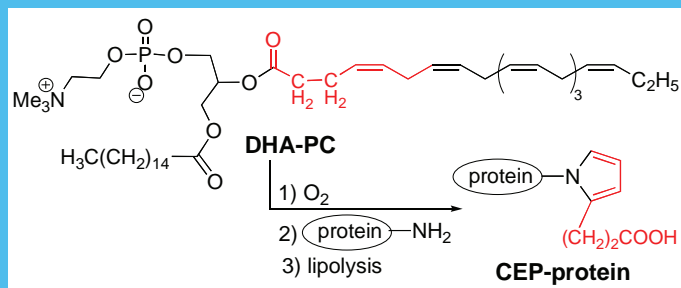
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Anna Cristina Samia

Faculty Highlight – Robert Salomon

Basic research in the Salomon group, exploring the biological involvements of lipid oxidation, has delivered a bonanza of molecular mechanistic insights into cardiovascular disease, age-related macular degeneration (AMD), and autism. Recently, Xiaoxia Zhang, one of the group's graduate students, spearheaded a collaborative investigation with the Cleveland Clinic that showed how lipid-derived oxidative protein modifications promote cancer growth and wound healing. Previously, the group discovered the formation of carboxyethylpyrroles (CEPs) in vivo and their ability to promote angiogenesis, the growth of new capillaries, which causes the vast majority of vision loss in AMD. Now CEP-induced angiogenesis was shown to promote tumor growth and wound healing through activation of a "pattern recognition receptor" (TLR2) of the innate immune system (*Nature* 2010; 467:972-6). The group's investigational approach – from the



chemistry of bio-molecules to disease phenotype – that complements the more common opposite paradigm and is proving remarkably productive.

Anna has enjoyed her first few months in the Chemistry Department at CWRU, and is looking forward to an exciting journey as a faculty member here.

Thomas Robilotto joined the Chemistry Department this fall as a Visiting Lecturer. Thomas was raised in Elma, New York and received his undergraduate degree at the State University of New York College at Buffalo. He went on to receive his PhD here at CWRU under Thomas Gray.



Thomas Robilotto

The work that Robilotto focused on during his graduate studies involved the formation of new phosphine and N-heterocyclic carbene gold(I) compounds as well as the synthesis of gold(I) thiacycrown ethers. These compounds are intended to be gold delivery vehicles for biological settings.

Now Thomas has taken on the position of educator for new students in science. His philosophy for teaching is to give students a solid understanding of the content and experience in a chemistry laboratory setting.

FACULTY AWARDS

Rekha Srinivasan, the 2010 recipient of the Carl F. Wittke Award (studentaffairs.case.edu/awards/wittke/), is an alum of our doctoral program. She received her undergraduate and masters degrees in India: B.Sc. in chemistry, physics, and mathematics from Bangalore University, M.Sc. in analytical chemistry from St. Joseph's College in Bangalore, and M. Phil. in chemistry from the Loyola College in Madras. After receiving a PhD in 2003 for "Biophysical Studies of ABri Peptide Associated with Familial British Dementia" in Mike Zagorski's group, she did two years of postdoctoral study in Roger Marchant's lab in the Biomedical Engineering Department. She rejoined the Chemistry Department as a lecturer in 2005 and was promoted to senior lecturer in 2008 and instructor in 2009.

Rekha teaches the large, two-semester sophomore organic chemistry lab during the school year. She has also taught both semesters of the sophomore organic chemistry lecture and lab courses in the summer session. She has updated and added new experiments to the organic chemistry lab course, including new videos of the pre-lab demonstrations. This year she revamped the entire chemistry laboratory course for engineers, after consultation with the Chemical Engineering and Macromolecular Science Departments. Her teaching

style is highly interactive, holding the students to high standards and at the same time supporting them in their efforts to master the material.



Rekha Srinivasan

Rekha is an active participant in the Women in Science and Engineering Roundtable (WISER) at the Flora Stone Mather Center for Women (www.case.edu/provost/centerforwomen/wiser/). Along with student members of WISER, she has established an international outreach program called SEVA, which means “service” in Sanskrit. The SEVA program donates school supplies, benches, uniforms, etc., to orphanages and public schools in Bangalore, India. Rekha and her students raise funds for SEVA by selling chai tea and samosa (a vegetarian Indian delicacy) every Wednesday, known as WISER Wednesday, at Nord Hall in the CWRU School of Engineering.

ALUM UPDATES

Manoj Babu, MS '97, PhD '98, finished his exec MBA from Duke in

2006 and joined Vidantus Alliance in 2008.

Tom A. Baldwin, BA '61, was voted into the Source Evaluation Society - Stack Testers Hall of Fame. He is currently developing a Source Fine Particulate Test Method for the EPA-OAQPS.

Robert Burns, BA '79, is a geriatrician and runs the Geriatrics Group of Memphis.

Timothy Chao, PhD '96, accepted a job with Chemical Abstracts Service as a Scientific Information Analyst. His responsibilities include reading journals/ patents (both in English and Chinese), writing abstracts, and drawing molecular structures.

Ron Cicero, BS '95, is Senior Manager of surface chemistry at Pacific Biosciences in Menlo Park, California, where he aims to give scientists and engineers freedom to do independent research.

David Cory, BA '81, PhD '87, was named to one of the Canada Excellence Research Chairs by the Canadian government. This includes funding for his Quantum Information Processing team at the Canadian Institute for Advanced Research (CIFAR).

Janeel Ramzan Chohan, BA '03, received his MD in 2008 from NEOUCOM in Rootstown, Ohio. He is presently doing a residency at Akron City Hospital.

(continued on page 8)

Marko Farion, BA '84, DDS '88, and his wife, **Christine Lash-Farion**, DDS '90, moved to Troy, Michigan, where they now practice.

Steven Ferguson, BS '75, has recently been selected as Deputy Director of Licensing & Entrepreneurship at the NIH Office of Technology Transfer.

Michelle Frangos, BA '99, graduated from Ohio State in 2003 with an MD. She is a practicing Emergency Medicine Physician at Mercy Medical Center in Canton, Ohio.

Jeremy W. Gorman, MS '53, is about to publish "Energy: The World's Largest Revolution." He invented an inexpensive, roof-mounted wind generator. He also published "Ramblings of an Outdated Old Coot" in 2009.

David Hamilton, BS '56, retired after working many years at the Ohio Agricultural Research Center.

David A. Hammond, MS '50, PhD '51, retired from Saint-Gobain in 2001.

Ori Hampel, BA '88, MD '92, did a six-year residency at Baylor College of Medicine, then went into private practice as a surgical subspecialist in the Houston area.

Anton (Tony) J. Hopfinger, PhD '70, received the 2010 Herman Skolnik Award from the ACS Division of Chemical Information. He is a Distinguished Research Professor of Pharmacy

at the University of New Mexico.

Robert Howe, BA '78, practices reproductive endocrinology and studies musicology.

Jay Jindal, BA '86, MD '90, and his wife **Tina Jindal**, BA '86, MD '90, live in Toledo, Ohio. He practices otolaryngology.

Rasesh Kapadia, MS '87, PhD '91, lives in Wayne, Pennsylvania, and works for Scanco USA, Inc.

Monique V. King, BA '54, MS '55, PhD '59, MD '65, retired from her psychoanalysis practice in 2003. She lives in Tucson, Arizona.

Wha-Suk Lee, MS '59, was an Honorary Researcher and chemical consultant for KIST in Seoul, South Korea, from 1993 to 2001. He is now retired.

Joseph J. Loparo, BS '01, started as an Assistant Professor in Harvard Medical School's Department of Biological Chemistry and Molecular Pharmacology in July.

Michael R. McDevitt, BA '80, PhD '85, has been promoted to Associate Member with positions in the Departments of Medicine and Radiology at the Memorial Sloan-Kettering Cancer Center.

Micheal L. McElroy, MS '71, PhD '73, is now manager of the corro-

sion monitoring product line at Pepperl+Fuchs, GmbH. His products measure aqueous corrosion for refineries and chemical plants.

Daniel L. Meges, BA '69, spent the last two years of his career as a staff physician for the Cleveland Clinic Foundation Medical System before retiring.

Larry S. Miller, BS '00, is an Assistant Professor of Chemistry at Westminster College in Pennsylvania.

Robert A. Nozik, BA '56, MD '60, is presently Professor Emeritus at the University of California–San Francisco.

A. Frances Pearlmuter-Blumenfeld, MA '67, PhD '69, recently retired after 19 years as a Professor at the Medical College of Ohio, and 17 years teaching chemistry at the Horace Mann School.

Cynthia Perrine, PhD '10, is employed with Meridian Life Science at its Memphis branch. She is manufacturing vaccines for Phase I and Phase II clinical trials.

John Powers, MS '69, retired after 34 years with Ball Corporation. He lives in Colorado.

Jarrold Predina, BA '06, won a Doris Duke Foundation Clinical Research Fellowship for 2009-2010. He is in medical school at the University of

Pennsylvania.

Nathaniel D. Russell, BA '93, MD '97, served as a Flight Surgeon in San Angelo, Texas, and deployed to Saudi Arabia and Iraq. He completed a residency at Fairview Hospital in Cleveland and another in Detroit, and he currently works as a family physician at an urban clinic in downtown Columbus, Ohio.

Egon Safar, BA '78, DDS '82, devotes his private dental practice to cosmetic, implant, and restorative care.

W. G. Sayre, BS '65, is a Professor Emeritus of the University of Maine, where he shares his knowledge of atmospheric chemistry.

Jenna (Vergotz) Schenker, BS '07, is a coatings development chemist in Pittsburgh and is working towards a master's in colloids, polymers, and surfaces.

Sambhav Shah, BA '95, MD '99, has been with Lake Health since July of 2002 as an attending emergency physician.

Mary Wolf Sheldon, BA '53, MD '57, is still a practicing psychiatrist 53 years after graduation.

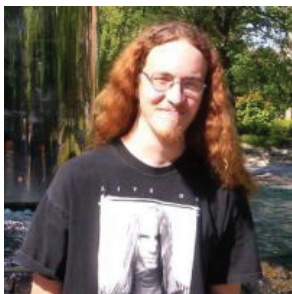
C. Larry Garrison Sullivan, PhD '71, is working at Avila University as Dean of Science and Health.

Lei Sun, MS '95, is now working on single-molecule DNA sequencing at Pacific Biosciences, Inc. He lives in San

(continued on page 10)

Jose, California.

Thomas M. Sutliff, GRS '70, is currently teaching in the Medical Biotechnology Department at the University of Illinois.



Jim Updegraff

Jim Updegraff, PhD '10, is now a chemist at The Electroizing Corporation of Ohio here in Cleveland.

R. Allen Wilkinson, PhD '86, still works at NASA Glenn Research Center in Cleveland on granular physics relevant to extraterrestrial exploration.

John V. Wilson, BA '75, MS '82, is now a process development consultant for BioPDT Consulting, after working at Amgen, Genzyme, and Johnson & Johnson.

Li-Tain Yeh, MS '88, PhD '91, has been in the pharmaceutical/biotech area since 2001, and now leads a pre-clinical department that includes bioanalytical, drug metabolism, PK, tox groups, and Phase I/II clinical trials.

IN MEMORIAM

ALUMNI

Murray S. Benway	BS '44
Richard D. Cadle	BA '36
Barbara Scharrer Heinze	MS '65
Colie Lawrence Jenkins, Jr.	PhD '70
Allen David Schwartz	MD '75

OTHERS

Kerro Knox, former faculty
Lydia Milite, former administrative assistant

DEPARTMENT SUPPORT

We are very proud of the accomplishments of our students and alumni. A great deal of the Department's progress is made possible by the generous support of alumni and friends. You can contribute to our continued success by making a gift to the Department. Gifts to Chemistry will be used to fund graduate fellowships and more. Your gift allows the Department to continue to offer opportunities for our students to excel academically and to conduct cutting-edge research. Please return your gift in the enclosed envelope or give online at giving.case.edu. Thank you.