

DEPARTMENT NEWS

Towson University Department of Chemistry

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A Message From The Chair

Welcome to Towson Chemistry students, faculty, staff, alumni and other visitors!!

The Department is on the move, with new academic programs, growing enrollments, a number of energetic young faculty (and some seasoned veterans) and facilities under renovation.

We offer at the undergraduate level the Chemistry major with two tracks (General and Professional/ACS Certified), Chemistry Secondary Education, Forensic Chemistry and Medicinal Chemistry (Dual Degree program with the University of Maryland Baltimore School of Pharmacy). We also have a Masters in Forensic Science and participate in several interdisciplinary undergraduate and graduate programs. Our total number of undergraduate majors is about 330 and there are over 30 Forensic Science graduate students—a sizeable increase in recent years.

In this issue you will see profiles of some of our junior faculty and an obituary for Dr. Nordulf Debye, whom we lost in October 2009. For those of you who have missed some recent history, I regret to report that several other long-time members of the Department passed away in recent years—Linda Sweeting, Alan Wingrove and Frank Milio. Several others are enjoying retirement and still teaching at Towson—Larry Boucher, David Larkin and Joseph Topping—see the article on Dr. Larkin's retirement in this issue).

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A Message from the Chair – continued

As our numbers of students and faculty grow, our facilities have become increasingly strained. The University has funded a couple of major renovation projects to provide more efficient utilization of our space on the 5th floor of Smith Hall. In 2007-8 the Stockroom was converted to four faculty offices (we now have a smaller Stockroom down the hall) and the Chemistry Learning Center was divided into the SAACS Lounge and a shared office. Also, two large multi-user faculty/student research labs were created by redeploing space.

As I write this the Physical Chemistry Laboratory is being converted to a room for our new 400 MHz NMR, a large multi-user research lab and four offices. Over the summer the Inorganic Chemistry Laboratory will be renovated to house both Inorganic and Physical Chem classes.

Faculty Profile

Dr. Timothy Brunker



Tim Brunker was born and raised near Tunbridge Wells, in the country of Kent in southeast England. From the ages of 11-18 he attended The Skinner's School in Tunbridge Wells, where he took Math, Chemistry, Physics and English A-levels and represented the school in cross country running, athletics and rugby. In 1994 he began his undergraduate degree in Chemistry at New College, University of Oxford. He graduated in 1998 with a M. Chem. degree having completed an undergraduate research thesis in the lab of Professor Dermot O'Hare. He continued in this lab for his D. Phil. Degree, where he performed research in the field of Organometallic chemistry, specifically the synthesis and characterization of so-called "sandwich" complexes of first row transition metals.

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After successfully defending his D. Phil. thesis in December 2001, Tim moved to the United States and began a post-doctoral in the lab of Professor David Glueck at Dartmouth College, NH. He spent two and a half years there investigating new routes to the synthesis of P-stereogenic phosphines through Pd-catalyzed asymmetric phosphination reactions. After leaving Dartmouth, Tim spent three semesters at the College of the Holy Cross in Worcester, MA teaching General Chemistry.

He also collaborated with Professor Richard Herrick in synthesizing Re complexes of tridentate ligands, as analogs of radioactive Tc complexes for medical imaging applications. He then took a lecturer position at Boston University where he taught General, Quantitative Analytical and Organic chemistry classes for two years.

In August 2008, Tim became a faculty member in the Chemistry department at Towson University teaching Organic chemistry. He currently has two active research projects involving undergraduate researchers: the synthesis of metal complexes containing chiral sulfoxide ligands for applications as chiroptical molecular switches; and the development of the chemistry of azaferrocenes as ligands for metal-catalyzed asymmetric reactions. In August 2009 he was appointed as the Jess and Mildred Fisher Professor of Chemistry.

Tim is married to Patty Brunker who is a physician specializing in transfusion medicine and is currently a research fellow at the National Institutes of Health in Bethesda, MD. They have a 2-year-old daughter, Anastasia and a one-month-old son, Geoffrey. As well as his interest in science, Tim enjoys classical music, sports, travel and politics.

Faculty News

Dr. David Ownby was elected to the Board of Directors of the North America Society of Environmental Toxicology and Chemistry (SETAC). The members of the SETAC number more than 5000 in 80 countries, balanced among academia, business, and government professionals. Members have expertise in environmental chemistry and toxicology, biology, ecology, atmospheric sciences, health sciences, earth sciences, and environmental engineering, and are involved in environmental education, research, management, regulation, life-cycle and risk assessment, and chemical production.

Dr. Ryan Casey received the 2009 Fisher College of Science and Mathematics Excellence in Scholarship award. Dr Casey has published 11 papers in prestigious peer-reviewed journals, has been the principal investigator or Co-PI on grants totaling almost two million dollars, including some from highly competitive National Science Foundation programs and co-authored over 50 oral or poster presentations at regional, national and international conferences – most of which had student co-authors.

New Faculty

Dr. Ellen Hondrogiannis

Ellen Hondrogiannis obtained her Ph.D. in Analytical Chemistry in 1994 from the University of Tennessee in Knoxville. At that time she also entered active duty in the U.S. Army where she served for 8 years as a Research Biochemist in the Medical Service Corp. During this time she served as Principal Investigator and Branch Chief in the Drug Assessment Division of the U.S. Army's Medical Research Institute of Chemical Defense at the Aberdeen Proving Ground, MD and then as Principal Investigator in Method Development and as Deputy Commander of the U.S. Army's Forensic Toxicology Drug Testing Laboratory at Ft. Meade, MD.



After resigning from active duty, Dr. Hondrogiannis served first as an adjunct and then a full-time lecturer in the Chemistry Department at Towson University. In the fall of 2009 she became an Assistant Professor of Forensic Analytical Chemistry at Towson. Her current research interests include developing analytical techniques for the analysis of homemade explosives, elemental fingerprinting of starting materials for chemical agents, and the application of chemometrics in identifying country of origin of spices.

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Dr. Sonali Raje



Sonali Raje obtained her Ph.D in Biochemistry from the University of Delaware. She did post-doctoral research on breast cancer also at the University of Delaware. As a Teaching Assistant at Delaware, during her doctoral studies, she developed an interest in determining how students learn abstract chemistry concepts. After completion of her post-doctoral studies, she decided to further her interest in how students learn. She enrolled in the University of Maryland at College Park and obtained a Masters degree in Science Education. Her research at the University of Maryland involved determining how experts and novices employ strategies of solving organic chemistry problems and how diagrammatic external representation can potentially contribute to a student's misconceptions in conceptual learning and alternative problem solving strategies in college chemistry.

Retirement

Dr. David Larkin, Professor of Analytical Chemistry, retired on June 30, 2009. Dr. Larkin is a native of the UK and he received his Bachelor's and Doctoral degrees at Loughborough University of Technology. He was a Postdoctoral Fellow at the University of Texas and served as a Research Associate at Georgetown University and an Assistant Professor at Florida Technological University before joining the Department of Chemistry at Towson State College in 1973. During the next 36 years, Dr. Larkin became an institution in the Department and a leader in the Fisher College of Science and Mathematics and the University. He established an active research program in electroanalytical and surface chemistry and published 22 papers. Dr. Larkin trained and mentored many research students, devoting huge amounts of time to their education. Many of his former research students have gone on to distinguished careers in academia or industry. He also has mentored many of our junior faculty.

Retirement continued

Dr. Larkin, together with Dr. Joseph Topping, developed a strong analytical chemistry curriculum. His notable service roles included membership on the University Senate, chairmanship of the College Council, Promotion and Tenure Coordinator at the Department and College levels and many others. He was recognized with the Fisher College of Science and Mathematics Outstanding Faculty Award in 2000.

In Memoriam

Dr. Nordulf Debye



Dr. Nordulf W. G. Debye, Professor of Chemistry, died on October 9 after a long illness. Dr. Debye was a physical chemist in the tradition of his grandfather, Peter Debye, who won the Nobel Prize in Chemistry in 1936.

Dr. Debye received his B.S. in Chemistry from Rice University in 1965 and his Ph.D. in Chemistry from Cornell University in 1970. He did postdoctoral research at the National Bureau of Standards and was an Assistant Professor of Chemistry at Colorado Women's College before coming to Towson State College as a Visiting Lecturer in 1975. He was promoted to an Assistant Professor in 1975, Associate Professor in 1983 and Professor in 1990.

Dr. Debye's area of research was in thermal analysis of materials. He also had a strong interest in the scholarship of teaching and coauthored a laboratory manual, *Experiments in Chemistry*, with Frank Milio and Clyde Metz. Dr. Debye played an important role in leadership at the Department and College level, serving as Department Chair from 1986-1992, Acting Chair in 1995 and Associate Dean of the College of Natural Science and Mathematics from 1997-1999. He performed many valuable service assignments within the Department and College and served on the University Senate.

Dr. Debye was an inspiring and warmly regarded teacher, whose lectures and Web course materials were a model of clarity. He made the complex and highly mathematical subject of physical chemistry understandable to generations of students and gave them vast amounts of his time and support.

Dr. Debye is survived by his wife, Irene, and five children.

Staff News

Mr. Rodney Dixon, Lab Manager received the Fisher College of Science and Mathematics Staff Performance Award. He was cited for his dedication, hard work and invaluable contributions to the smooth functioning of the Department of Chemistry.

Ms. Liina Ladon, Class of '76, Tutoring Center, will celebrate her 30th anniversary at Towson University on March 10th. Liina was also nominated for the University of Maryland System Staff Award in 2009, and her website is the most popular website on the internet for chemistry tutoring. Liina has maps in her tutoring center with pins to show all the locations world-wide that have visited her web-site.

Grants and Publications

Dr. Clare Muhoro, Dr. Lev Ryzhkov, Dr. Tim Brunker, Dr. Barry Margulies (Biology), Dr. Ana-Maria Soto and Dr. Shannon Stitzel were awarded a National Science Foundation - Major Research Initiative grant of \$307,323 for the acquisition of a 400 MHz NMR Spectrometer to support research and chemical education.

Dr. Ryan Casey, Dr. Joel Snodgrass (Biology), and Dr. Steven Lev (PAGS), were awarded a National Science Foundation Research Experience for Undergraduates grant of \$212,238 to support undergraduate summer research in Urban Environmental Biogeochemistry.

Dr. David Ownby was awarded a Copper Development Association grant of \$14,228 to assess the accuracy of the Biotic Ligand Model in natural waters.

Dr. Ryan Sours was awarded a Research Cooperation grant of \$44,100 to develop a Chromatographic Phase-Display technique for indentifying peptides that inhibit calcium oxalate monohydrate crystal growth

Dr. Ryan Casey, Dr. Joel Snodgrass (Biology) and Dr. Steven Lev were awarded a National Science Foundation grant of \$187,474 for studying storm water management ponds in urban environments.

Dr. Shannon Stitzel was awarded Science Applications International Corporations' research contract to study sensors for detection of toxic industrial chemicals in water.

Dr. David Larkin and Dr. Ryan Sours were awarded a Fisher College of Science and Mathematics Endowment grant of \$73,500 for the purchase of a High Performance Liquid Chromatograph.

Grants and Publications continued

Dr. David Larkin and Dr. Ryan Sours were awarded a Fisher College of Science and Mathematics Endowment grant of \$60,000 to network major college instrumentation making it accessible from remote terminals worldwide.

New Endowments

& Fellowships

Professor Frank Milio, a Chemistry Department faculty member from 1966 – 2007, bequeathed an endowment to establish a Book Prize in his name to be given to a student to achieve success in their field.

Dr. Linda Marie Sweeting, a Chemistry Department faculty member from 1970 – 2002, has bequeathed an Endowment to establish Fellowships to support undergraduate research in science.

Dr. Alan Wingrove, a Chemistry Department faculty member from 1973 – 2006, has bequeathed an Endowment to establish a scholarship for chemistry majors.

Student News

Undergrad News

BriAnne Betivegna received the Student Affiliates of the ACS Scholarship for 2010.

Kaitlyn Grosso received the *Maryland Section of the American Chemical Society Achievement in Chemistry Award* for 2010.

Loren Fierstein received the CRC Press Freshman Chemistry Achievement Award for 2010.

Phuong Ha received the Frank R. Milio Book Endowment for 2010.

Ben Roembke received the Analytical Division, ACS, Award in Analytical Chemistry for 2010.

Natalie Sigwart received the Floyd Blankenship Memorial Award for 2010.

Amy Smith received the *Greater Washington Institute of Chemists Student Award* for 2010.

Amy Smith received a Ronald and Linda Raspet Summer Research Fellowship for 2009.

Student News continued

Stephanie Stanley received the *Gibbs Award in Chemistry* for 2010.

Stephanie Stanley received a Ronald and Linda Raspet Summer Research Fellowship for 2009.

Debra Alito was accepted to the *University of Maryland Medical School* for the class of 2014 and will begin classes in August.

Eric Languirand announced that Dr. Kollman and students are creating a Forensic Science Student Organization. They are waiting for approval from the SGA (Student Government Association) and have 30 members interested.

Graduate News

Derek Rodgers successfully defended his thesis, "Zn in Salinized Soils: Combined effects on *Lumbricus Terrestris*", in November 2009 receiving his Master of Science degree in Environmental Chemistry.

Alumni News

Alicia M. Fraind recently published a paper: Alicia M. Fraind and John D. Tovar, "Comparative Survey of Conducting Polymers Containing Benzene, Naphthalene, and Anthracene Cores: Interplay of Localized Aromaticity and Polymer Electronic Structures, *J. Phys. Chem. B* 2010, 114, 3104-3116.

A Facebook site coming soon. See our next issue for more information.

Let us hear from you! Please send your information to : chemalums@towson.edu

We welcome all visitors to the Department. It would be great to see or hear from our alums!