

UTC CHEM CONNECTION

SUMMER 2011

Newsletter for the Department of Chemistry at the University of Tennessee at Chattanooga

Connection: The importance of chemistry is widely recognized, and the year 2011 has been designated by the UN as the “International Year of Chemistry.” We are grateful for that general recognition of chemistry and particularly grateful that you recognize the importance of the Department of Chemistry at the University of Tennessee at Chattanooga. I want to thank you for your connection to us and your support and give you an update of departmental happenings. Tom Rybolt, Head Dept of Chemistry



Back in Grote Hall: The Chemistry Department moved offices and select labs to temporary modular buildings in August 2008. We moved back into the newly renovated Grote Hall in September 2010 and we now occupy the third and fourth floors. The third floor contains the general chemistry lab, biochemistry lab, two classrooms, 24-computer station computer lab, student room, and student lounge/study area. The fourth floor has the Organic lab, Quantitative Analysis, Instrument lab, NMR, expanded space for research students, an advanced research instrument lab, seminar room, and classroom. The main department office is on the third floor along with most of the faculty offices. The Department of Physics and Geology is now located on the first and second floors, and some new Environmental Studies/Biology labs are on the first floor.

Improvements: The conclusion of this eight million dollar, state-funded renovation of Grote Hall is an exciting time of opportunity and challenge for us in the Department of Chemistry. We have new classrooms, new teaching labs, an extensive space for research activities with students, a new larger general chemistry lab room, an organic lab with all students working in hoods, a new centralized instrument lab, a computer lab, and a number of significant improvements in laboratory appearance, function, and safety.

News and More (click on items below for more information and pictures):

[Pictures of new chemistry labs and rooms in Grote Hall](#)

[Grant receives National Chemistry Award for undergraduate research](#)

[Grote Scholar and chemistry major Tyson Ward to return to campus after recovering from boating accident and coma](#)

[Ben Gross \(retired\) celebrated renovation of Grote Hall and History of Department at 23rd annual Department of Chemistry Awards Banquet](#)

[Potts research students studying electronic cigarettes and cigarette litter](#)

Sherlock Holmes chemical mysteries by Waddell (retired) and Rybolt featured in the inaugural virtual issue of the Journal of Chemical Education

UTC commencement address to December 2010 Graduates given by Symes

Grant along with Kim and Knight secure funding for Benchtop X-ray Diffractometer

Symes recipient of 2010 UT Alumni Association's Outstanding Teacher Award

[Student presentations at professional meetings](#)



Students: We taught 2200 lab students during the most recent academic year. Also, in 2009-10 we had 32 graduates and in 2010-11 we had 28 graduates complete their chemistry degrees. Among our recent graduates, we have had students go on to professional schools in pharmacy, dentistry, engineering, nursing, and seven of last year's chemistry graduates entered medical school. Still others continued on to graduate schools to pursue MS or PhD degrees in chemical or biochemical areas. Other graduates proceeded directly to industrial employment or teaching.

Future: We are excited to have an improved physical space to more closely fit our needs, glad (and challenged) to have many students taking chemistry classes, and proud of our graduates. We seek to serve the educational needs of our students in lectures, laboratories, and research. Should you have any questions about future donations to UTC or if you wish to make a donation to the department you can specify the "Chemistry Gift Fund." Click on [UTC Development](#). If you would like more information about the department, please see our website <https://www.utc.edu/arts-and-sciences/chemistry-and-physics> and if you want more pictures or past newsletters, then from our website select the option "Newsletter."



Faculty Activities UTC Chem Connection Newsletter 2011

Dr. Greg Grant published the following papers with the indicated UTC students “Thiacrown Pt(II) Complexes with Group 15 Donor Ligands”; **Desiree Benfield** in *Dalton Transactions* in 2009. “Antimony-Carbon Bond Activation in a Pt (II) Complex”; **Desiree Benfield** in *Journal of Organometallic Chemistry* (2010). “Platinum group metal thiacrown complexes as precursors for self-assembly reactions”; **Desiree Benfield** and **Rishi Naik** in *Supramolecular Chemistry* (2010). “Ruthenium(II) Thiacrown Complexes: Synthesis, Electrochemistry, DFT, and X-ray Diffraction Studies of [Ru(15S5)Cl](PF₆)” with **Dr. Daron Janzen** in *Inorganica Chimica Acta* (2010). Grant presented the following talks: “Lords of the Thioether Rings: Squares, Triangle, Square Pyramids, and Triangular Bipyramids in Pt(II) Thiacrown Chemistry,” invited departmental seminar; presented to the Department of Chemistry and Biochemistry, Auburn University, Auburn, AL, November 12, 2009 and also presented to the Department of Chemistry, Eastern Illinois University, Charleston, IL, Sept. 14, 2009.

Dr. Harriet Hamilton hosted the honors chemistry class (30 students) from Ooltewah High School in her General Chemistry class last spring so they could experience a university chemistry class. Dr. Hamilton also presented chemistry demonstrations to students from Hardy Elementary.

Dr. Doug Kutz, working with research student, **Rishabh Shah** presented the paper “A Computational Chemistry Experiment in Reaction Dynamics for Undergraduate Physical Chemistry,” at the Southeast Regional Meeting of the American Chemical Society in San Juan, Puerto Rico (October 2009).

Dr. Jisook Kim received \$10,000 funding for Wheeler Research Fund grant to study “Ribonuclease A: Modifications Induced by the substituted Benzoquinones.”

Dr. Kyle Knight, working with **Yan Gao** and **Elisha Fielding**, published “Zirconocene catalysis in the synthesis of 1,4-dimagnesium reagents: using competitive inhibition to suppress β -hydrogen abstraction” in *Transition Metal Chemistry*.

Dr. John Lee has joined the Department in a two-year postdoctoral appointment and is working with Dr. Grant as a NSF/Grote Fellow. Dr. Lee is a Chattanooga native, attending Chattanooga State before transferring to UTC and graduating in 2003 with a BS in Chemistry. He then completed a PhD in organometallic chemistry at NC State. Dr. Lee spent two years in the chemical industry with Eastman Chemicals in Texas before returning to UTC in August of 2010.

Dr. John Lynch and **Nicholas Daugherty** and **David Shved** presented the paper: “Automation of Spectrophotometric Titrations,” at The Joint 66th Southwest Region and 62th Southeast Region Meeting of the American Chemical Society in New Orleans, on December 2010. In November 2010, Dr. Lynch received a grant from the Faculty Research Committee to support the purchase of data analysis software for spectrophotometric titrations.

Dr. Robert Mebane and **Dr. Tom Rybolt** co-authored the book *Environmental Science Fair Projects, Revised and Expanded Using the Scientific Method* published by Enslow Publishers, 2010. Dr. Rob Mebane published: with student **Sam Chill** “A Tandem, Facile One-Pot Conversion of Aldehydes into Nitriles” in *Synthetic Communications*, **2009**, *39*, 3601; and with Dr. Dan Zuidema of Covenant College along with students Katherine Wert, Sarah Williams, **Sam Chill**, **Kimberly Holte** and **Nathan Kokes** “A Novel Method of Reducing Ketones Using Sodium Hydroxide in 2-Propanol” in *Synthetic*

Communications, **2010**, *40*, 1187; and with **Sam Chill** "Facile One-Pot Conversion of Aldehydes into Amides" in *Synthetic Communications*, **2010**, *40*, 2014.

Dr. Gail Meyer is serving as General Chemistry Lab Director and with **Jim Narramore**, Faculty Associate and Lab Coordinator oversee the functioning of the General Chemistry I and II labs (CHEM 1110L and CHEM 1120L) We now have more than 800 students a semester doing general chemistry labs.

Dr. Gretchen Potts gave an invited seminar at Appalachian State University on September 24, 2010 titled "Not Just An Eyesore: Analysis of Cigarette Leachates". With student Jessica Moerman, Dr. Potts published "Analysis of metals leached from smoked cigarette litter," *Tobacco Control*, **2011** *20* (Suppl 1) i30-i35. Dr. Potts also was selected as one of 13 faculty to serve on the ACS Analytical Exam committee. This national committee will meet three times over the next year to write a new exam, which quantitative analysis students across the nation will begin taking in 2012.

Dr. Tom Rybolt and research students **Jennifer Gordon** and **Christina Wells** published, "Adsorption of Cholesterol on Carbon Powders" in the *Journal of Chemistry and Chemical Engineering* (2010). Rybolt and research student **Austin Hall** (with Dr. Howard Thomas, Amanda Reavis: Erskine College, SC) co-authored the poster presentation, "Interaction of Organic Molecules with Nanoporous Carbon" at the Regional ACS meeting in New Orleans (2010).

Dr. Manuel Santiago is serving as Associate Department Head to deal with issues including scheduling, closed classes, and freshmen summer orientation.

Dr. Steven Symes is returning from a one-year research sabbatical where he was engaged in a collaborative research project funded by NASA to determine when liquid water was present on Mars. Symes worked with Dr. Lars Borg, Research Scientist at Lawrence Livermore National Laboratory, to conduct chronological and mineralogical studies of Martian meteorites.

Alumni News UTC Chem Connection Newsletter 2011

To share news with us go to <https://www.utc.edu/arts-and-sciences/chemistry-and-physics> and select "Alumni Update"

Paul Akins ('85) is Director of a regional neuro-intensive care unit in Sacramento, CA. His last research paper reported the paradox of brain hydrocephalus and low brain pressures.

Lisa (Frazier) Apolis ('83) is Director of Regulatory Submissions at Mikart, working closely with the FDA. She has worked in pharmaceutical companies Schering Plough and Amgen previously.

Robert Baker ('88) works with Roche Diagnostics Corp in Indianapolis. He is responsible for a sales and marketing organization that provides molecular biology equipment and reagents to Life Science researchers in both academia and industry.

Amy Balestrino was a research intern in summer 2010 at the University of Regensburg in Germany.

James Beattie ('73) is the Army State Surgeon for the Tennessee Army National Guard. He served in Iraq 2004-05 and in Kosova 2006.

Desiree Benefield ('09) attends Vanderbilt University and is in the Interdisciplinary Studies program.

Kevin Bivona ('09) attends graduate school at the University of Pittsburg, studying analytical chemistry.

Maikel Botros ('07) graduated from medical school at ETSU and will begin a residency in oncology in Wisconsin.

Christina Brosius ('11) is currently a Master's of Public Health candidate in Environmental Health at the Rollins School of Public Health at Emory University in Atlanta, GA.

David Brown ('94) is a Quality Manager/Laboratory Supervisor for W.R. Grace & Company.

Sean Brown ('91) attended The Medical College of Georgia after UTC and received his M.D. degree.

He completed a residency in Physical Medicine and Rehabilitation at the University of Kentucky, and has a medical practice in Cleveland, TN.

Chrystal (Williams) Bruce ('97) received the South Carolina Independent Colleges and Universities 2001 Excellence in Teaching Award. She is Associate Professor of Chemistry at Erskine College.

Daniel Burriss ('09) is attending graduate school at the University of Kentucky.

Michael Cagle ('08) is worked in the anatomy and neurobiology department UTHSC, and is starting dental school. He was married June, 2010.

Kathy (Quarles) Cannon ('80) is a microscopist for Bureau Veritas North America.

Jin Cheng ('10) just finished her first year of graduate school in the biomedical program at UT-Memphis.

Dorothy Dalby, who retired in 1982, passed away April 26, 2010. Dr. Dalby was a registered nurse during World War II and was a UTC Chemistry Professor for over 25 years.

Jane Dickerson ('05) defended her dissertation in spring 2010 at University of Washington and began a two-year fellowship to study Clinical Chemistry there last July. She attended a conference in March 2010 in the Czech Republic for the Microscale Bioseparations Symposium in Prague.

Susan Fant, who taught as a lab instructor for many years, passed away October 17, 2010. She also worked as a chemist at Chattem for several years.

Jamie Fitch ('03) is a navy flight surgeon.

John Flynn ('62) retired from the TA Instruments division of Waters Corp in 1999 after spending 16 years in thermal analysis and having an eclectic career in chemistry through Dupont, State of Delaware, Getty Oil, and Infotronics.

Elizabeth (Hamilton) Forrester ('00) received her PhD in Cancer Biology from Vanderbilt and teaches chemistry and biology at McCallie School and Chattanooga State. She has two sons.

Michael Foster ('95) completed his flight surgeon service with the Navy in 2009 and accepted an anesthesia residency at University of Michigan. Married with six children.

Andrea (Mitchell) Goforth ('01) is Assistant Professor at Portland State. She received a Burroughs Wellcome Fund Award, is an ONAMI Signature Research Fellow, and is working in the nano realm of inorganic chemistry making targeted inorganic nanoparticles for in vivo imaging agents.

Denisha Griffey ('03) is working in the chemistry department at Tennessee State University as the chemistry coordinator.

Lensey Hill ('04) received her PhD from the University of Alabama in May 2009. She is currently employed at Georgia-Pacific in the industrial board resins division.

Greg Helton ('04) completed his MD degree at ETSU and started a residency in psychiatry in 2010.

Myron Jones ('84) defended his thesis and graduated from Oklahoma with a PhD in Analytical Chemistry. He began a new faculty position in Chemistry at Southern Illinois University in Fall 2011.

Minjung Kang ('10) just finished her first year of dental school at UT-Memphis. She traveled to the Philippines in Summer 2011 on medical mission through UT-Memphis.

Miyoung Kim ('09) will be starting dental school at University of Alabama at Birmingham in Fall 2011.

Rebecca Kirk ('91) graduated from medical school at Emory and practices Internal Medicine in Birmingham, AL.

Tracy Knowles was named the 2009 Kentucky Professor of the Year. In the last 20 years, Bluegrass Community and Technical College is the only community college in Kentucky to have a professor earn this honor.

Steven Ledford ('09) is attending dental school at UT-Memphis.

John Lee ('03) is currently a NSF/Grote Postdoctoral Fellow in the Department of Chemistry at UTC.

Erika (Milczek) Olson ('05) completed her PhD in 2010 and then accepted a postdoc position at Princeton. She married in 2011.

Barney Miller passed away in June 2010. Dr. Miller trained in Biochemistry at UT-Memphis, completed postdoc training at Duke in biochemistry and medicine, spent 10 years in biotechnology corporations, and then 15 years at ETSU as associate professor in the departments of psychiatry and behavioral sciences and anatomy and cell biology.

Lindsey Miller ('07) is employed as a QC Chemist at a chemical company called Zeco in Chattanooga. She works in the lab to ensure quality control and also conducts research & development work.

German Morera ('10) finished a biomedical program in California. He married in Spring 2011.

Rebecca (Hogue) Mott ('93) is Project Manager for the Metallurgy and Chemistry Services Department of Central Laboratories, TVA.

Paula (Kilgore) Nunley, who worked at Alco Chemical for 21 years, passed away October 3, 2009.

Robert Osborne ('01) was a 3rd year NIH Postdoctoral Fellow at UC-Berkeley in 2010.

Deborah Poteet-Johnson ('81) received her MD degree from UT-Memphis in 1985, then completed a pediatrics residency at T.C. Thompson Children's Hospital and then a fellowship in adolescent medicine in Miami. After 19 years of practice, she started another practice named Psychotherapy Alternatives in Chattanooga, and is working on a book.

Ivan Poullaos ('99) works with "chemistry and the law" as a pharma patent litigation attorney (as well as other patent litigation) with the Winston Law Firm in Chicago.

Karen Rogers-Partyka ('91) finished a PhD in Chemistry at the University of Alabama and married in Fall 2005. In late 2008, she was living in Atlanta and working as a medical science liaison for Galderma Laboratories. She travels extensively giving talks to dermatologists about medicines for skin disease.

Warren Shipley ('09) enlisted in the Army after graduation, is a combat medic and is currently serving a year in Afghanistan. He married in Fall 2010 and plans to apply to physician's assistant school after his deployment is over.

Sarah (Sewell) Pierce ('03) is an assistant professor of Chemistry and Engineering Science at Cumberland University in Lebanon, TN. She completed her Post-doc at Vanderbilt in the Biomedical Engineering Department working on developing nanoparticles to detect breast cancer.

Sharon Rose, who retired in 2000, passed away in 2011. Ms. Rose was the administrative Assistant for the Department of Chemistry from 1979 until 2000.

Patrick Siler ('09) is attending medical school at UT-Memphis.

Billy Smith ('82) joined the Air Force after graduation, became a pilot, then earned his MS in Industrial Technology from Texas A&M at Commerce in 1988. He retired from the Air Force as a LT Col in 2004 and currently works for AirTran Airways.

Keegan Smith ('98) graduated from UT-Memphis with his MD in 2002. After a residency in pediatrics at Vanderbilt, followed by Chief Resident of Pediatrics at Vanderbilt, and an allergy/immunology fellowship at Vanderbilt, he is an Allergy/Immunology Physician in Brentwood, TN.

Larry Thompson ('01) accepted the Director of R&D position at EDP Biotech Corporation in 2010, after receiving his PhD in Biochemistry at Vanderbilt in 2006 and having a post-doc position in the Department of Biochemistry, Molecular, and Cellular Biology at UT-Knoxville.

Doug Turner ('90) spent 10 years in technical chemical sales and then went into operations in 2009 with The Vincit Group, whose core business is hard surface sanitation and water treatment.

Shannon (Schanley) Walker ('99) held various positions in industry with product development and quality. In Spring 2010, she received a Master of Library Science degree from UNC. She plans to pursue scientific information management/librarianship.

Anthony Zimmermann ('87) is an independent anesthesiologist in Mason, Ohio.

Ivan Zubkov ('08) is attending Loma Linda University School of Medicine.

Xike Richard Zhang ('92) is head of APAX partners in mainland China overseeing all their business in China. APAX Partners is a private equity and venture capital firm based in the UK.