

**Newsletter, November 2003**  
**Department of Chemistry**  
**University of Tennessee at Chattanooga**

**Chemistry Program Expands Onto Third Floor**

The chemistry program has expanded onto the third floor of Grote Hall. This much-needed additional space houses our biochemistry laboratory, a chemistry computer lab, a new student research/tutoring/study room, and six faculty offices. Drs. Santiago and Meyer, along with research students, have the new biochemistry laboratory fully operational. This lab is part of a \$150,000 commitment by the department to provide an enhanced biochemistry experience for students. The new chemistry computer lab will house twelve new computers for use by students to prepare lab reports, perform computational chemistry, carry out literature searches, and access chemical journal articles on-line.

**Lupton Renaissance Award**

The Chemistry Department was selected by Chancellor Stacy to receive \$124,000 from the university's Lupton Renaissance Program. This award has been used so far to acquire a Cary 100 Bio Vis/UV Spectrometer, a Varian Spectra AA-220FS Atomic Absorption Spectrometer, a Jasco P-1010 Automatic Digital Polarimeter with monochromator accessory, two Buchi Model R-200-V Rotary Evaporators, and six new computers. Additional acquisitions will be made in the coming months. We are delighted to replace several older instruments with modern, research-quality equipment.

**Promotions and Tenure**

Dr. Gail Meyer, a tenured faculty member, was promoted to Full Professor this year. Dr. Meyer has been a member of the chemistry faculty since 1981 and specializes in general chemistry, course development, and research involving chemical education, women in chemistry, and biochemistry. Dr. Meyer received the SGA Outstanding Professor award for 2002-03 and the 2002 University Service Award last fall.

Dr. Kyle Knight was promoted to Associate Professor and was awarded tenure. Dr. Knight joined the chemistry faculty six years ago and his areas of expertise are organic and organometallic chemistry. His research involves catalysis by transition metal complexes and stereoselective synthesis. Congratulations to Dr. Meyer and Dr. Knight!



Summer 2003 Research Group

Mebane, Gretchen Potts, Manuel Santiago, Steve Symes, and Tom Waddell. From Biology/Environmental Science, faculty members Drs. Henry Spratt and Sean Richards directed students Katherine VanDeusen and Daniel Barker. Chemistry students participating were Lensey Hill, Greg Helton, Weinan Chen, John Lee, Ken Patel, Laura Palmiero, Erika Milczek, Sara Magee, Mary Teague, Scott Gass, Jane Dickerson, Brett Ferrell, Paul Boerema, and Robert Craven. In addition, Dr. Greg Grant

**Another Great Summer  
Research Program**

It was "full steam ahead" for our interdisciplinary research program this summer. A total of 31 faculty and students performed full-time research for ten weeks. Over the past three years this outstanding program has received funding exceeding \$180,000 from sources including the Merck/AAAS Foundation, the UC Foundation, and the Grote Chemistry Fund. This year, faculty participating from Chemistry were Drs. Greg Grant, Monte Helm, Kyle Knight, John Lynch, Rob

used research funding to support Dr. Larry Mehne and student David Klinger from Covenant College. Dr. Grant also supported Girls Preparatory School chemistry faculty member Keith Sanders and student Melissa Brown. A highlight of the summer was the visit by Dr. Dabney Dixon, of Georgia State University, who presented an excellent seminar on her research. The 2002-03 Summer Research Program officially concluded with a poster session and reception on Nov. 4th in the newly renovated University Center. Students presented their fine work to fellow students, faculty, and administrators. Funds are in place to enable each student participant to present their research at regional and national conferences.

### **List of Research Awards**

The Chemistry Department faculty have been extremely successful in obtaining research awards. Dr. Greg Grant received a \$200,000, three-year grant from the National Science Foundation for Research at Undergraduate Institutions (NSF-RUI). His research is titled "Complexation Studies of Heavy Metal Ions by Crown Polythioethers and Related Macrocyclic Ligands." This grant will support a postdoctoral fellow in the department from 2004 to 2006. Dr. Grant also received funding from the Petroleum Research Fund for \$50,000 for three years. Dr. Robert Mebane is in the second year of a two-year grant from the Research Corporation for \$30,684 for his catalysis research. Drs. Greg Grant and Kyle Knight are in the second year of their \$60,000 grant from the Wheeler Odor Center. Dr. Kyle Knight is in the second year of a three-year, \$50,000 grant from ACS's Petroleum Research Fund. Ten professor/student groups were successful in securing Provost Student Research Awards totaling \$8,367. Congratulations to our faculty and students on their pursuit of excellent research.

### **Biochemistry Concentration**

BS Chemistry majors at UTC now have the option of pursuing a Biochemistry Concentration within their degree track. The aim of this concentration is to prepare students for advanced study or employment in biochemistry or a health-related research field. Key courses in this new concentration are the traditional first-semester course in biochemistry, Chem 466, and also *Proteins and Nucleic Acids*, Chem 467. In Chem 467, Dr. Santiago combines an intense lecture experience with advanced laboratory experiments in biochemistry. Majors opting for the biochemistry concentration are also required to complete course work in genetics plus cell biology or microbiology.



Student Affiliates at the Horizon Recruiting Fair

rafting trip down the Ocoee. Last year they raised money selling chemistry T-shirts and beaker mugs. This year they participated in Horizon, an on-campus recruiting fair for high school students. Dr. Santiago accompanied the affiliates to UT Memphis to visit the medical school and graduate school. On Mole Day

### **Student Affiliates Activities**

The Student Affiliates have been very active this year. As sponsors for the group, Drs. Santiago and Potts have guided the revitalization of the student group and have encouraged its growth. The group now numbers twenty-two and participates in a variety of activities, both civic and academic. Lensey Hill is President, and Stephanie Vermillion serves as Vice-President. Chanda Price is Secretary, and Rajan Kshatri serves as Program Chair. The Student Affiliates rounded out last year with a trip to the Jack Daniels Distillery, a cleaning day in the Chemistry Library, a winter luncheon for faculty and majors, and a

the Student Affiliates sponsored games and held a doughnut sale. This year they are selling sweatshirts and mugs as fundraisers. What a dynamic group this is! We extend our gratitude to Drs. Potts and Santiago and the student leaders for all the time and effort they are investing in this fine group. Anyone interested in receiving email updates about the Student Affiliates may send an email to [Chemistry-Club@utc.edu](mailto:Chemistry-Club@utc.edu) and request that they be added to the email list.

### **Chemistry Conferences**

Faculty and students have represented our campus very well by presenting research papers at regional and national meetings. Last November, eight faculty and thirteen students gave research talks at the 2002 Southeast Regional Meeting of the American Chemical Society in Charleston, SC. In March 2003, four faculty and seven students presented papers at the ACS National Meeting in New Orleans. In November, twenty-three individuals gave research talks at the 2003 SERMACS in Atlanta. Attending this meeting were Drs. Doug Kutz, Kyle Knight, Greg Grant, Rob Mebane, Tom Rybolt, Gretchen Potts, Manuel Santiago, Gail Meyer, and Steve Symes. Students attending were Lensey Hill, Ken Patel, Mary Teague, Scott Gass, Vanessa Janeksela, Erika Milczek, Paul Boerema, Greg Helton, Jane Dickerson, Laura Palmiero, Randi Gant, Weinan Chen, Brett Ferrell, and Sarah Prince.

### **Congratulations to Alicia Allen**

Alicia Allen, a BS Chemistry major with a Biochemistry concentration, was awarded the Female Public Service Award in October 2003. This award is sponsored by the Alumni Office and Student Development and is awarded to a female who is involved in campus and community affairs. Congratulations, Alicia!

### **Grote Scholars**

Congratulations to our Grote Scholars: Daniel Chatham, Lauren DeLoach, Kendra Hanlon, Lindsey Miller, Amanda Mansfield, Vanessa Janeksela, Nathanael Kokes, Sara Magee, Ketankumar (Ken) Patel, Alicia Allen, Laura Palmiero, Carrie Stewart, and Stephanie Vermillion. We are extremely proud of these exceptional, talented majors.

### **Recent Publications and Invited Talks**

Dr. Tom Waddell was invited to give lectures on "Prebiotic Organic Chemistry Related to the Origin of Metabolic Pathways" at the Carnegie Institute of Washington, D.C. and at George Mason University. Drs. Tom Waddell and Tom Rybolt co-authored their 14<sup>th</sup> Sherlock Holmes Chemical Mystery, entitled "The Blackwater Escape" in the *Journal of Chemical Education* (80, 2003, pp.401-406). Dr. Rob Mebane, with students David Jensen and Kerry Rickert, and Dr. Ben Gross, co-authored "Transfer Hydrogenation of Nitriles with Raney Nickel and 2-Propanol" in *Synthetic Communications*, 33(19), 3373, 2003. Dr. Mebane was invited to give a seminar in the Department of Chemistry at Rhodes College. Dr. Greg Grant, together with Dr. Helm and alums Andrea Goforth, Jaime Pool, Kristi Loveday, Michael Combs, and Elizabeth Bentzen, published five papers in four publications: *Inorg. Chem. Acta*, *J. Chem. Soc.*, *Dalton.*, and *J. Chem. Cryst.* Dr. Grant was also invited to present a seminar in the Department of Chemistry and Biochemistry at the University of Oklahoma. Dr. Steve Symes was invited to the Carnegie Institute in Washington, D.C. to present a seminar entitled "Comparison of the Properties of Chondrules and Crystalline Lunar Spherules." Drs. Mebane and Symes each attended weeklong "PolarisQ Operation" courses to obtain hands-on experience in the operation of the department's new GC/Mass Spec instrument. Dr. Gail Meyer published "Encouraging Female Undergraduate Students" in the *Journal of College Science Teaching* (October, 2002) and "Scientific Communication for Chemistry Majors: A New Course" in the *Journal of Chemical Education* (October, 2003).

### Updated Web Pages

We invite you to visit our updated web site at [www.utc.edu/chemdept](http://www.utc.edu/chemdept). Among items new to the site are a Pre-Professional section, developed jointly by Chemistry and Biology, and an ACS Student Affiliates section. The site contains information on the pre-professional and degree programs, the new Biochemistry concentration, department news and pictures, course curricula, scholarships, and student activities. We thank Drs. Kyle Knight and Gretchen Potts for their excellent work on this project.

### Spring Awards Banquet

Last April ushered in our 15th annual Chemistry Awards Banquet, where chemistry majors were recognized for their contributions to the department in service, research, and scholarship. Laboratory assistants, office assistants, summer and academic-year research participants, Departmental Honors candidates, recipients of Provost Student Research Awards, inductees into Gamma Sigma Epsilon, and graduating seniors were all recognized. Students were recognized for receiving the following scholarships: Grote, Marvin Anthony, Murray Raney, Dr. Charles Robert Thomas Pre-Medical, and Alco Chemical



2003-2004 Grote Scholars

Scholarships. Students received the following awards: Higdon Textbook, Analytical Chemistry, Organic & Polymer Chemistry, Hypercube, American Institute of Chemists, American Chemical Society, Swan, Edwards, and Gross Award. Joining in the celebration were Provost John Friedl, Vice-Chancellor Richard Brown, Dean Herbert Burhenn, Vice-Chancellor Richard MacDougall, and Asst. Director of University Relations, Cindy Carroll. Dr. Harry McDonald of the UTC SimCenter presented an outstanding talk on Scientific Risk Assessment.

### Fall Enrollments Up

The Department of Chemistry has experienced tremendous growth over the past three years. From 2000 to 2003, enrollments have increased a total of 55% in General Chemistry.

### Dr. Helm Accepts New Position

Dr. Monte Helm, who came to UTC as a Postdoctoral Fellow under Dr. Greg Grant's Dreyfus Foundation Scholar/ Fellow Award, has accepted a tenure-track appointment in the Chemistry Department at Ft. Lewis College in Durango, Colorado. We extend warmest wishes to Chrissy and Monte as they relocate to the beautiful Rocky Mountains.