Letter from the Chair

I accepted a request from the Dean of the College of Natural Sciences this August to serve as interim chair for the 2014/15 academic year while we continue our search for an external department chair. I'm pleased to say that Dr. Graeme Henkelman will serve as Associate Chair during my term; he will focus on the educational mission of the department. Much has changed since my last term as chair, from 2004 to 2008, and I am excited to lead the department during this transition period.

In addition to the chair search, we are in the middle of junior faculty recruiting season, as we search for outstanding young faculty in the general areas of analytical and organic chemistry, with interfaces in materials science and biology. In the upcoming months, several talented postdocs from institutions around the country will travel to Austin for the extensive interview process. We seek to recruit outstanding young scientists with innovative and ground-breaking research programs to join our department in 2015.

I look forward to positive changes and new challenges ahead for the Department of Chemistry. As many of you know, Welch Hall is aging, and we are excited that funds are in place for the complete renovation of the west end of the ‘29 wing. We are finalizing plans for new research labs and classrooms that will be truly state-of-the-art. We will keep you apprised as this critical project moves toward completion in Fall 2016.

One of the goals for the immediate future is the expansion of departmental external communications efforts in an effort to stay connected with the department!

Connect with the department!

Click images below to follow us on Facebook, Twitter and LinkedIn

Alumni - send us your updates and news:

Larry R. Faulkner Excellence Fund

In honor of Professor Emeritus and President Emeritus, Larry R. Faulkner, the Faulkner Chair provides support for graduate recruiting visits. Annually, recruiting weekends bring some of the brightest prospective graduate students to UT Austin. By assisting with travel, lodging and event costs, the Faulkner Excellence Fund allows us to attract outstanding young scientists to the department.

Friends of Chemistry

Friends of Chemistry Fund provides fellowships based on merit to Chemistry students.

To support these funds, please visit the UTexas Online Giving page. Fill in the name of the fellowship you wish to support in the special information field. You may also visit the College of Natural Sciences for more giving opportunities. Thank you.

(Continued on page 2)
Keith Stevenson Testifies on Capitol Hill

On May 20th, Professor Keith Stevenson provided testimony to the Subcommittee on Research and Technology regarding the current state of nanotechnology research and development, as well as, its future opportunities and challenges. The hearing discussed policy issues, federal funding, and legislative initiatives.

Stevenson's testimony discussed the success of the National Nanotechnology Initiative (NNI), the impact of federal funding in nanotechnology, forthcoming prospects of nanotechnology in several sectors, and how UT Austin, specifically the Center for Nano- and Molecular Science and Technology, has significantly impacted STEM education, and the nations nanotechnology workforce via establishment of focused research, educational and training programs, dedicated user-facilities, and grant-assistance programs.

David Vanden Bout Appointed Associate Dean of Undergraduate Education

A former associate chair for the department, David Vanden Bout was recently named the Associate Dean of Undergraduate Education in the College of Natural Sciences.

In this position, he oversees offices within the dean’s office that support student excellence, advising, and degrees, and he works with the departments in their teaching and curriculum. Additionally, he develops and implements initiatives which are designed to foster students success and enhance the student experience.

Vanden Bout is a 2014 recipient of the Regent’s Outstanding Teaching Award.

James Holcombe Retiring

Professor James Holcombe is retiring after 40 years at UT. He made significant contributions to the infrastructure of the Department, College and University, as well as service to the broader community of spectroscopists and chemists. His research involved activities in two main areas: electrothermal vaporization-inductively coupled (time-of-flight) mass spectrometry and use of designed peptides for trace metal remediation and preconcentration. Holcombe served as department chair from 2000 to 2004.

A reception for Dr. Shoulders and Dr. Holcombe will be held in January on the UT campus. If you are interested in attending, please contact chemalum@cm.utexas.edu.

(Chair’s letter, continued from page 1)

connected with you, our alumni and friends. We will be supported in this important venture by Sarah Heier, who was recently added to the CNS development team. Sarah will be our personal contact to alumni and will help with outreach activities, including receptions at ACS meetings, which we hope many of you will be able to attend in the future.

It is bittersweet that I announce the retirement of Dr. Ben Shoulders. Dr. Shoulders has been an integral member of our department for nearly 55 years. A superb and renowned NMR scientist, his long service to UT and his expertise is valued by the department and the hundreds of students and postdocs whom he taught. As a colleague and personal friend, I wish him the very best.

I look forward to my time as chair and am excited for the future. You can keep up with our progress through our website and social media (see sidebar). As always, we appreciate your generous and continuous support of our department.

James Holcombe (left) and Ben Shoulders (right)
Alumni Updates

- **James L. Wittliff (B.A. 1961)** received the Morton K. Schwartz Award for Significant Contributions in Cancer Research Diagnostics from the American Association for Clinical Chemistry.

- **Richard E. Thomas (M.A. 1994)** is currently the Professor of Naval Science and Commanding Officer, Navy ROTC Unit at the University of Nebraska at Lincoln.

Alumni! Submit your news to chemalum@cm.utexas.edu. The updates will be printed in the next issue. Please include your full name and graduation year.

Alumnus Receives 2014 Reaxys PhD Prize

Changxia Yuan (Ph.D. 2013) is a recipient of the 2014 Reaxys PhD Prize. The prize is awarded for original and innovative research in synthetic chemistry, which demonstrates excellence in methodology and approach.

Dr. Yuan is one of three winners from a pool of 540 nominees. In September, he traveled to Grindelwald, Switzerland to attend the Reaxys Inspiring Chemistry Conference where he presented his research. The annual conference offers the opportunity to attend keynotes and presentations by members of the Reaxys Prize Club (former winners and finalists of the Reaxys PhD Prize).

Stellar Student Spotlight: Anthony Nanni

Anthony Nanni is a senior in the Department of Chemistry and an undergraduate learning assistant.

**What is your background and what are your interests?**

I came to UT as an opera performance major and then fell in love with chemistry after my freshmen year. I am heavily involved as a sports fan, Go Steelers.

**Describe your experience as a tutor:**

I am currently on my third year working as an undergraduate learning assistant in chemistry. During this time I have had the opportunity to improve students’ chemistry learning and grow as a leader. The program as a whole has given me invaluable experience in how to work on a team in a professional environment.

**What are your plans for the future?**

Following graduation, I plan to pursue a career for a few years and then return to school for my executive MBA. Hook ’em horns.

Department Meet-up in San Francisco

The Department of Chemistry and the College of Natural Sciences hosted an Alumni Reception during the American Chemical Society’s National Meeting in San Francisco. It was a chance for alumni, students, parents of current chemistry students and faculty to network and to connect. Keep an eye out for future alumni events!
In response to student feedback, the Department of Chemistry launched a project in early 2012 to transform CH 153K and CH 154K, the upper division Physical Chemistry laboratory courses. Some 200 Chemistry and Chemical Engineering students take these required courses each semester. Designed during a period in which physical chemistry was dominated by classical thermodynamics, the stated purpose of the existing labs, both here and around the country, was to “reinforce concepts taught in the corresponding lecture courses.” Students found the experiments to be dated, irrelevant, unreliable, and boring.

Chairman Brent Iverson asked Professor Alan Campion to transform these courses into modern versions that would better engage and educate students. Campion reviewed comparable offerings at the top U.S. chemistry departments and found only one model, at Texas A&M, was revolutionary, exciting, and worth emulating. The project was launched with the generous financial support of the College of Natural Sciences and the unmatched collegiality and cooperation of the Texas A&M faculty and staff. Equipment was ordered in early 2013 and the experiments were set up over the next 18 months by the developmental TAs and staff, under the daily hands-on supervision of Professor Campion. The new labs are now fully operational, with 12 sections being offered during the Fall 2014 semester.

Campion found several features of the A&M model particularly attractive. Each lab consists of four three-week modules that are connected both conceptually and instrumentally. The modular nature of the experiments requires students to learn what Campion likes to call the “fundamentals of measurement science,” that is how to make high quality measurements of the physical properties of chemical systems. Students learn optics, electronics, data acquisition and analysis, and interpretation. The experiments themselves reflect the nature of modern research, supplementing as well as complementing, the lecture material. Students are exposed to atomic scale imaging, biophysics, polymer physics and chemistry, nanoscience and technology, and computational chemistry.

While setting up the new experiments, it became clear to Professor Campion that cultural changes were sorely needed. These changes have been implemented and the TAs and staff are held to high standards. An unexpected bonus was the discovery that learning to do the experiments themselves provided the TAs with a much firmer understanding of the principles and methods used by experimental physical chemists, training that prepares them to begin their own graduate research.

Finally, in collaboration with the Undergraduate Writing Center, writing instruction and evaluation were introduced formally and systematically. The importance of good writing for this group of students cannot be overstated. As Campion tells them, “In 12-18 months, all of you will be in graduate school, professional school, or employed as professional scientists or engineers. In the real world, you must be able to write.”

As a result of the transformation project, CH 153K and CH 154K are more challenging, more interesting, more rewarding, and more relevant than their predecessors. Chemistry and Chemical Engineering undergraduates will now acquire essential skills that they will use throughout their continuing education and their professional careers.

Ben Shoulders Retiring

Widely respected nuclear magnetic resonance (NMR) scientist and beloved department lecturer, Dr. Ben Shoulders is retiring after 55 years at the University of Texas at Austin. Dr. Shoulders’ research and career were featured in the Fall 2013 issue of the newsletter. Regarding post-retirement plans, Dr. Shoulders says, “My wife and I will still have the ranch to keep us busy. I also plan to bring some of my software up to date and even start a new computer program to help with NMR assignments.”

A reception will be held for Dr. Shoulders and Dr. Holcombe in January on the UT campus. If you are interested in attending, please contact chemalum@cm.utexas.edu.