**Department News**

**Department Held Symposium in Honor of Prof. Guiochon**

*Date: 03/14/2015*

The Department of Chemistry hosted a symposium “Celebration of a Scientist” on Saturday, March 14 in Buehler Hall 511 from 10 to 12pm to honor the late Professor Guiochon. Guiochon is a much celebrated chemist, a chromatography pioneer, and a distinguished scientist. He passed away on October 21, 2014 at the age of 83.

Guiochon received the M.S. degree in engineering from the Ecole Polytechnique, Paris, France, and the Ph.D. in chemistry from the University of Paris. He was a Professor of chemistry at Ecole Polytechnique until 1985 and at the University of Paris VI or Universite Pierre et Marie Curie until 1984. He then moved on to Georgetown University, Washington, DC, from 1984 to 1987, and he was appointed a UTK/ORNL Distinguished Scientist in June 1987.

Before he passed away, Guiochon was a Distinguished Professor with the Department of Chemistry, University of Tennessee, Knoxville, also a Senior Scientist with the Oak Ridge National Laboratory’s Division of Chemical and Analytical Sciences, Oak Ridge, Tennessee.

Family and friends flew in from all over the world and gathered inside the chemistry building to not only celebrate Guiochon’s scientific achievements but also his life as a father, a husband, a friend, and a colleague. Six invited presentations were given by Guiochon’s students, collaborators, coworkers and his wife Lois Beaver.

*Check out more Professor Guiochon’s press releases online at: [http://chem.utk.edu](http://chem.utk.edu)*
Department of Chemistry Held 2015 Honors Day

Date: 04/24/2015

Department of Chemistry held its 2015 Honors Day on Thursday, April 23 at 3:40 in Buehler Hall 555. Vice Chancellor of Diversity, Rickey Hall, spoke at the event. More than thirty awards were presented to students, faculty and staff.

UNDERGRADUATE AWARDS
• CRC Press General Chemistry Award
  • Benjamin J. Nehls
• C. W. Keenan Outstanding General Chemistry Student Award
  • Jonathan S. Farmer
• Halbert and Anne Carmichael Scholarship
  • Christina D. Jackson
• C. A. Buehler Chemistry Scholarship
  • Madeline S. Stark
• East Tennessee Section, ACS, Award
  • Russell T. Smith
• Hach Foundation Scholarships
  • Bria A.L. Bannister, Brittany A. Ramsey
• Melaven-Rhenium Scholarships
  • Lauren A. Finney, Anna C. Fraser, Christina D. Jackson, Russell T. Smith, Madeline S. Stark
• Honors Chemistry Recognition

GRADUATE AWARDS
• Outstanding Teaching Awards
  • Samuel I. Mattern-Schain, Samuel A. Rosolina
• Keenan Teaching Award
  • Michael O. Yokosuk
• Second Year Candidacy Awards
  • Roberto A. Federico Perez, Shelby E. Stavretis
• Judson Hall Robertson Fellowship in Analytical Chemistry
  • Ryan B. Wallace
• Graduate Fellowship for Achievement in Inorganic Chemistry
  • Seth C. Hunter
• Jerome Eastham Fellowship in Organic Chemistry
  • Stephen P. Dearth
• Eugene John Barber Fellowship in Physical Chemistry

• Nicholas A. Strange
  • East Tennessee Section, ACS, Graduate Fellow
  • Kenneth O’Neal
• Gleb Mamantov Graduate Chemistry Scholar
  • Weiyu Wang
• Joint Institute for Advanced Materials Fellowship
  • Daniele Paradiso
• Eastman Chemical Company Travel Award
  • Roberto A. Federico Perez
• Winners of the Board of Visitors’ Poster Competition
  • Andrew J. Binder, Weiyu Wang

STAFF AWARDS
• Outstanding Service Awards
  • Johnny C. Jones, Rhonda E.W. Wallace

FACULTY AWARDS
• New Faculty
  • Ampofo K. Darko, Sharani Roy
• Retiring Faculty
  • Robert N. Compton, Alan A. Hazari
• Joe Johnson Lifetime Service Award
  • T. Ffrancon Williams
• Ffrancon Williams Endowed Faculty Award in Chemistry
  • Brian K. Long
• Gleb Mamantov Professorship in Chemistry
  • David M. Jenkins
• Ziegler Professor Announcement
  • Janice L. Musfeldt
• In Memoriam
  • Georges A. Guiochon

SPECIAL AWARDS
• Fellow of A.A.A.S. (American Association for the Advancement of Science)
  • John Z. Larese
• National School on Neutron and X-ray Scattering
  • Shelby Stavretis
• Synchrotron Radiation School, Sao Paulo Brazil
  • Kenneth O’Neal, Lena Elenkins
• Posthumous Chemistry Degree
  • Brittany L. Skyberg
The Department of Chemistry held a retirement party on Friday, May 29 to celebrate the retirement of Bill Gurley, Dr. Al Hazari and Tom Malmgren. Combined, they worked for the Department and the University for almost 70 years. Read on to enjoy some blurbs about their experiences here at UT, learn how they witnessed the changes and helped transformation of the Department over the past 10, 20 and 30 years.

What’s your educational background?
This will sound a bit odd, because I made a major career change in my early 30s. I have BS and MS degrees in sociology, the Master’s being from UTK in 1974. I worked for seven years for a regional planning agency, before deciding that I had taken a “wrong turn”. I went back to school to learn electronics, something I had been interested in since a young age. I got an Associates degree in Electrical Engineering Technology in Spring 1984, at Pellissippi State.

When did you start to work for UT and the Chemistry Department? What led you here?
After getting the A.S. degree in electronics, I was looking for an opportunity as an entry-level electronics technician. It just so happened that UT Chemistry had an opening, and I got a call from John Taylor, who was my predecessor in the position I now hold. When he called me about the job, I politely and naively asked “Can you tell me why a chemistry department needs electronics technicians?”

What’s your day to day job like? Has it changed over the years?
My job is very diverse. It involves electronics repairs and consulting; support for computers, departmental servers, networking; assisting faculty and staff with building issues, laboratory upgrades, etc.; purchasing of computers and other technology; and supervision of a great team of technicians. In the first few years, it was almost totally electronics support. After about 4-5 years (late 80s, early 90s), the computer stuff really grew exponentially. A lot of the computer support has been in research labs, interfacing computers with instrumentation.

Do you still remember the first day at work? Can you describe the day for me?
I’m not sure if I can remember the first day. But I do remember that my supervisor showed me an NMR spectrometer the first week I was here. This was an early NMR spectrometer with a permanent magnet, unlike the superconducting magnets we have today. In order to obtain reasonable spectra, it was very important to optimally “shim” the magnet. Today such things are handled by computers, but back then it was done by humans, carefully turning dials for different electromagnetic coils in order to shape the field. It was as much art as science, and it could take hours to do it correctly. I think that my supervisor was either trying to test my patience, or just trying get me out of his way for half a day. It was very tedious and boring. But that was pretty much the only time here that I have been bored!

What was the most interesting thing happened during your career here at UT?
I can’t think of a specific event to mention. For me, there is more of a broad overall feeling of how interesting it has been to learn so much technology at this place, and to be a part of it. It has been so interesting and rewarding to work with so many people from so many countries around the world, with so many ethnic backgrounds. There have been so many graduate students, post-doctoral associates, faculty and staff that have come to this department and spent a few years, then moved on. Many of them I got to know really well, and felt that we learned from each other. I feel blessed to have had that diversity in my workplace all these years.
What were some of the challenges you met during your career at UT?

Around 1985-86, a short time after I began here, I was asked to fix our 200MHz FT-NMR spectrometer. At that time, that was the only NMR instrument that we had which used a superconducting magnet. It was the best NMR instrument that we had. But something was wrong with the electronics, and so it has been down for weeks. There was no warranty, and no service contract, and there was no one on the staff who knew anything about how to approach the troubleshooting of this instrument. The faculty involved knew that it would take time for me to learn about the instrument, and they were prepared to wait, but the faculty wanted someone to “take ownership” of the support of that instrument and try to get it operational again. I recall that a sympathetic grad student brought me several old papers that described the physics and the electronics of pulsed, FT-NMR spectrometers. That helped immensely in my understanding of how the instrument worked. Then a very nice service engineer with the manufacturer of the instrument gave me a quick tutorial over the telephone on how to track down RF pulses using the minimal equipment that we had. In a few weeks it was running again, and I had become “the NMR guy”. This was years before our department had a Ph.D.-level NMR Director.

Another big challenge was in the early days of networking, around 1992. My associate Johnny Jones and I had been learning about networking and were anxious to see it move forward in the department. But we had trouble convincing faculty members that becoming part of this computer network would be a good thing for them. Eventually, with support from Dr. Bill Bull, our Associate Head at the time, we came up with a way to get everyone connected at minimal cost. That was when we set up interdepartmental email and folks began to appreciate the benefits of this new way to communicate.

Have you noticed any changes during your years at the Department? What are they?

The physical size of research instruments has shrunk dramatically. A typical UV-VIS spectrophotometer, for example, is about 1/4 the size now that it was when I came in 1984. We had about four water-cooled electromagnets in the building back then for NMR and ESR spectroscopy. Those have all been superseded by superconducting magnets. There were still a few research instruments in the department that used vacuum tubes when I first came. We used an Air Force surplus vacuum tube tester to troubleshoot them. Computers! There were only about 2 or 3 PCs in the building when I arrived. Now they are everywhere on every desk and practically in every pocket. The changes in data storage technologies has really been amazing to watch. No more 35mm slide projectors in the lecture halls!

What’s your plan after retirement?

Read, exercise, cook, play music and travel. I will probably also do a bit of computer consulting, and I intend to continue learning new things!

I am currently the Councilor for the East Tennessee Section, and nationally. I have chaired the ACS Committee on Chemical Safety. I was very humbled and honored to have received the ACS Helen M. Free Award for Public Outreach in 2000 and to be named a Fellow of the American Chemical Society in 2011.

Lastly, working with the outreach programs of both the College of Arts & Sciences and the College of Engineering allowed me to make a contribution to UT’s efforts for engagement with our local and extended communities.

What were some of the challenges you met during your career at UT?

The one thing I regret through my career was the trend to reduced state support. That trend led to a number of times when chemistry lab program improvements had very slow progress. Through creative work by the leadership in the department, the college and the university, and a lot of patience and persistence, new and innovative equipment is now in place and the students have the opportunity to use updated lab experiments and procedures. contin

Have you noticed any changes during your years at the Department? What are they?

There have been so many changes in the department that I don’t know where to start: Retiring and new faculty and staff, remodeling of individual labs as well as the entire building, and different directions in the department. All these have added to making my UT experience more productive, interesting, exciting and enjoyable.

What’s your plan after retirement?

There is more to come! I will continue with activities to assist with the preparation for the move of the teaching labs to Strong Hall. Also, I will be maintaining my chemistry and science outreach and staying involved with the American Chemical Society. I am also excited to have more time to spend with family and visit my adult children – who are now living in Tennessee, New York and California!
What's your educational background?

Bachelor of Science in Chemistry from The American University in Cairo; Master of Science in Radioanalytical and Nuclear Chemistry from Youngstown State University in Ohio; Doctorate in Science Education from The University of Tennessee in Knoxville.

When did you start to work for UT and the Chem Department? What led you here?

Prior to coming here, I taught chemistry lectures and coordinated undergraduate chemistry labs at the University of Mississippi in Oxford for 15 years. I came to UT’s Chemistry Department in July 1991. The move to UT gave me a chance to share my knowledge and experience with more students at a larger university and chemistry department. The East Tennessee area was very attractive for the opportunities for my wife and three children.

What’s your day to day job like? Has it changed over the years?

Over the past 24 years, my job has varied and I have had the opportunity to do many things that I love. When I arrived as Director of Undergraduate Chemistry Labs (a newly created position for the department), I worked with all the undergraduate chemistry labs in the department.

As more students chose to study chemistry, the focus narrowed to labs for the first-year chemistry courses. Today, these usually involve about 2,000 students, 65 graduate students and several stockroom personnel.

I also had the opportunity to lecture and to engage in community service. From 1995 to 2005, I taught senior and graduate courses in science education. In 1999, I started teaching two chemistry courses for non-science majors: Chemistry and Society (in the fall) and Chemistry in the Home (in the spring). These were discontinued in 2009. My final three-year stint teaching nursing-track chemistry courses closed out my classroom contact. In collaboration with others and with the support of many outstanding graduate students, I have been fortunate to interact with East Tennessee area’s K-12 students and teachers the majority of the last 24 years. I have enjoyed working with a large number of students, faculty and staff at all levels of the educational pipeline.

Do you still remember the first day at work? Can you describe the day for me?

I remember that on my first day here, I stopped by the General Chemistry labs and met a wonderful group of dedicated staff. From my prior experience, I looked around with a focus on making sure that the lab safety equipment was highly visible. With the assistance of the stockroom supervisor, I got a can of red paint and some brushes and went to work painting the big exhaust pipes above the fume hoods on the benches where the eye washes are located. I am proud to say that, during my 24-year UT tenure, no serious accidents happened in our teaching labs.

What was the most interesting thing happened during your career here at UT?

There were many interesting things, and I will only mention a few. First, in addition to teaching lecture courses and directing undergraduate chemistry labs, I was fortunate to interact with faculty from the UT Science Education Department in the College of Education. The excellent faculty led me to the pursuit of my terminal degree, which makes me a true Tennessee Vol! Those connections have allowed me to become a resource for many K-16 chemistry and science teachers and instructors.

Second, attending annual chemical education conferences provided a chance for me to share UT chemistry information and stories with faculty and students for all over the world. It was at one of these meetings that I met a German chemistry professor with whom I later co-authored the book, “Misconceptions in Chemistry,” published by Springer.

Third, getting to know and work with the members of the East Tennessee Section of ACS, energized me to be active not only locally but also on the national level.

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Tom Malmgren, Manager of Polymer Characterization Lab, joined the Department in 2003

Do you still remember the first day at work? Can you describe the day for me?
I can remember the first day walking into the lab with all of the instruments and not knowing a single thing about any of them. It was very intimidating.

What was the most interesting thing happened during your career here at UT?
There have been so many interesting facets of my position that I cannot think of just one. The challenge of learning and understanding the operation of instruments, working daily with international people rather than just Americans, and performing so many interesting and challenging experiments are a few.

What were some of the challenges you met during your career at UT?
The two biggest challenges were the huge learning curve and dealing with so many different languages and the accents involved.

Have you noticed any changes during your years at the Department? What are they?
The biggest change for me is that the motivation level of the students that I deal with now does not seem to be as high as it was when I first started. I have also seen lots of changes in staff and faculty over the 12 years.

What’s your plan after retirement?
I am sure this is a result of age but I don’t have the energy, mentally and physically, to do things outside of work like I used to do. After retiring, I will hopefully have the energy (and time) to do some of those things such as photography, volunteer work through church, taking a class, woodworking, and taking day trips with my wife just to mention a few.
Jeff Kovac, professor of chemistry, is to give a talk about “Ethics of chemical weapon research” in the upcoming American Chemical Society National Conference in Denver, CO, from March 22 to 26. His talk is highlighted on C&EN web site as part of “Denver National Meeting Mania”. A C&EN must see presenter, Kovac will give the talk on Tuesday, March 24 from 3:45 to 4:15pm in Tower Court D at Sheraton Denver Downtown Hotel.

Abstract
Throughout history the use of chemical weapons in warfare has been controversial. The morality of chemical weapons research is similarly controversial because several potentially conflicting obligations and codes of ethics impact the decision of the individual chemist as to whether to participate in such research. In this presentation I will discuss the complex ethical questions surrounding chemical weapons research. All chemists are members of a national community with the obligations of citizenship, but they are also professionals subject to a code of ethics. Of course, they are also members of the human community and consequently subject to the more or less universal common morality. Membership in a religious community might also add moral restraints. A key question for chemists is whether the current code of ethics can provide adequate guidance in trying to deal with this complex issue.

Professor Xue’s Research Featured at Spark!2015

Chemistry professor Ziling (Ben) Xue’s “Simple Optical Sensor for Biodiesel Contaminant in Jet Fuel” is being featured at Spark!2015. Xue will be presenting his technology on March 25 in the 1-6pm symposium held in Tech 2020 Atrium on 1020 Commerce Park Drive, Oak Ridge, Tennessee.

Spark! is a half-day symposium providing new technologies available for licensing developed at Oak Ridge National Laboratory and the University of Tennessee. Business leaders, entrepreneurs, and regional stakeholders are invited to learn more about these new technologies, explore commercial opportunities, and provide feedback. Xue’s research mainly looks at methods for detection of biodiesel contaminants in jet fuel that are not only rapid, sensitive but also economical and can be mass-produced.
Chemistry Graduate Student Organized Fundraise for McClung Museum

Date: 03/18/2015

Sam Rosolina, a fourth year chemistry graduate student in Professor Xue’s Group and the chemistry representative on the Graduate Student Senate, organized the 2015 Big Orange Adventure, a fundraising race/scavenger hunt that benefited McClung Museum of Natural History and Culture on University of Tennessee Knoxville campus. This year’s fundraising was held on Saturday, March 7th and raised a total of 820 dollars.

A total of nine stations and tasks were created across campus, such as World Puzzle Based Using Periodic Table to Solve (chemistry), Laser Table Obstacle Course (physics), and Tower of Hanoi (math). Once completing all tasks, the competing teams were allowed into McClung Museum to solve one final riddle using their knowledge of some of the exhibits.

“There were eight teams with 42 participants total.” Rosolina said. “We gave out two baskets filled with sponsor in-kind gifts. The first went to the fastest team, and the second went to best team costume. We also had some trophies that one of my committee members made from spray-painted figurines that he got at a thrift shop nearby.”

In previous years, the GSS hosted the “Love Your Libraries 5k” to benefit the UT libraries; specifically the “De-stress for Success” campaign during Finals Week. Profits from the race were donated to the library to help provide relaxing services during Finals Week. Starting 2014, the format of the race was changed to a scavenger hunt.

Chemistry Graduate Student Gave Talk to SRSP Students

Date: 04/28/2015

Tanei Ricks, a third year Ph.D. student in the UT Department of Chemistry and a PEER (Program for Excellence & Equity in Research) scholar, visited his alma mater, Georgia Regents University (GRU) on April 24, and gave a talk entitled “Synthesis of Derivatives of myo-Inositol to Enable Chemical Biology Studies” as part of the STEMinar Series organized for Savannah River Scholars Program (SRSP) students.

Ricks was part of the SRSP inaugural class and was also the first person to graduate from SRSP to pursue a higher degree. “It was cool to see the students there now,” Ricks said. “Some of them actually remembered me from under grad which was nice because a lot of them were just coming to GRU when I was trying to graduate.”

More than 50 students and faculty attended the seminar. Ricks was proud to serve as a good example for other SRSP scholars. “Everyone was genuinely excited about the work I was doing and had accomplished to date so it was nice to be an example of success coming from a small school and going to a big school.”

Ricks joined the Chemistry Department in 2012 and was inducted into the PEER class of 2013. “It’s great being a part of PEER. I’ve gotten a great opportunity to do outreach, develop new academic programs and seminars, as well as having extra time to devote to research. Being in PEER so far has definitely helped me get acclimated to grad school as well as preparing for life after it.” Ricks said.
Graduate Students Presented at Lester Andrew’s Symposium

Two graduate students in Professor Hinde’s group, Ashleigh Barnes and Matthew Dutra, traveled to Mississippi State University and presented at the 5th Annual Andrews Graduate Research Symposium on May 19th. Both Barnes and Dutra also received Andrews Graduate Travel Award which supported their trip there.

Barnes’ talk was focused on developing a model for hexagonal close packed (hcp) solid helium, a quantum solid, which includes a description of three-body interactions. She admitted that being the first presenter on the first day was “nerve wracking but fun.” Barnes said, “I received a lot of great questions and interest in my project, which is always encouraging.”

Dutra’s talk, titled “A density functional approach to understanding superfluid He-4 systems”, described using both a “mixing” and an imaginary time propagation method within density functional theory to evaluate the properties of free surfaces of He-4 as well as He-4 against attractive surfaces. “I thought the presentations went really well, and I got a few questions afterward too, which is always rewarding.” Dutra commented, “A lot of the other presentations were geared towards natural synthesis and biochemistry applications, but they were all good talks as well.”

Over 20 graduate students from 8 different universities presented at this year’s symposium. “The goal is to give students a chance to practice their talks and share their research at a small meeting,” said Dr. Emily Rowland, instructor at MSU chemistry department.

Ashleigh Barnes Awarded at Sigma Xi Research Competition

Ashleigh Barnes, a third year Ph.D. candidate in Hinde’s Group, received Second Place, Blue Award during Sigma Xi Graduate Research Presentation Competition held on April 13, 2015. A total of 19 graduate students from 10 departments participated.

Barnes gave a 15 minutes presentation entitle “Toward Understanding Three-Body Interactions in HCP 4He.” “…it was a great experience because there were people from all different departments presenting and judging, so it was an opportunity to present my research to a very diverse audience, rather than the audience of chemists I have been used to,” said Barnes. “I enjoyed getting to hear about the research projects taking place in other departments throughout the school as well.”

The goal of the competition is to “give science/engineering graduate students the opportunity to share their research while promoting Sigma Xi,” said Professor Angel Palomino, President of UT Sigma Xi. “I only observed a few of the presentations (we had 3 simultaneous sessions). Overall, they were impressive, especially Ashleigh’s.”

Sigma Xi is an international honor society of science and engineering established in 1886 “to honor excellence in scientific investigation and encourage a sense of companionship and cooperation among researchers in all fields of science and engineering.” The society’s mission is to “enhance the health of the research enterprise, foster integrity in science and engineering, and promote the public’s understanding of science for the purpose of improving the human condition.” The UTK Sigma Xi Chapter was reactivated in 2014 and has held two annual research competitions so far.
Chemistry on Social Media

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