New Graduate Students Enter Program

Shilpi Agrawal is from Ahmedabad, India. She received her BS from Gujarat University and her MS from Vellore Institute of Technology, both in India.

Taylor Bradshaw is from Fort Smith, AR. She received her BS from UA Fort Smith. She is pursuing a master’s degree.

Curtis Goolsby is from Little Rock, AR. He holds a BA degree from UT-Austin and a BS degree from UA Fayetteville.

Isabelle Niyonshuti is from Rwanda. She received her BS from Spelman College. She was a UA REU participant under Colin Heyes.

Ifezi Orizu is from Nigeria. He received his BS from the University of Ontario Institute of Tech.

Cynthia Robinson is from Rogers, AR. She received her BS from UA Monticello.

Taylor Snider is from Harrison, AR. She received her BS from UA Monticello.

Truman Williams is from Marion, AL. He received his BS from Troy University.

Layla Al-Mitib is from Saudi Arabia, but was born in Winona, MN. She received her BS and MS from King Saud University. She will be working with Dr. Kumar as a CEMB student.

Taryn Jack is from Ada, OK. She received her BS from East Central University. She will be working in the Sakon lab in the CEMB program.

Alix Montoya-Beltran is from Mexico City, Mexico. She received her BS from the U of A. She is a CEMB student with Paul Adams.

Patrick Pysz is from Pittsburgh, PA. He received his BS in Biochemistry from the U of A. He is working in the Stenken lab as an MEPH student.
Faculty News

On the Go

Marlena Patrick, Zayne Derden, and David Paul. In Situ Recalibration of Biofouled Polymer-Coated Amperometric Oxygen Microelectrode Array. Poster presented by Marlena at the ACS meeting in Philadelphia, August 21, 2016. (Photo below)


O. Matsushita, R. Gensure, T. Ponnapakkam and J. Sakon. Patent application, “Fusion proteins of collagen-binding domain and parathyroid hormone” EP 2,155,874 was granted and was validated in 13 countries in Europe on May 11, 2016.


Publications


The Mole Street Journal

Honors and Awards

Peter Pulay received the American Chemical Society’s National Award in Theoretical Chemistry for 2017. It will be presented in April, 2017 in San Francisco at a black-tie dinner, along with an award symposium.

Jie Xiao received a one-year industry grant for $230,000 to conduct battery research.
From the Chair ~ Wesley Stites

As we start the new school year, we have noted in the Mole our new faculty, instructors and students. We are thrilled to have such a great new crop of people joining us. But I am going to celebrate something a bit different – a major drop in enrollment. That’s right. We lost enrollment in CHEM 1103, University Chemistry I, dropping from 1,612 students in Fall 2015 to just 1,404 this fall. That’s nearly a 13% decrease! And University undergraduate enrollment climbed by 1.8%. And we were warned to expect at least a hundred additional undergrads in Chem I. So why did it happen and why am I tickled pink?

The answer is that the department’s faculty have voted to change our math pre-requisite for Chem I, to help our students. Chemistry majors are great students, but lots of other students take chemistry and many of them struggle with our favorite subject. We are trying to do our part to improve the University’s graduation and retention rates, which are much lower than we would like. Chemistry I appears to be a big part of the solution for the University. Among members of the 2005-2015 fall full-time, degree-seeking, new freshman enrolled in Chem I, 32.1% got a D, an F, or withdrew from the class, the so-called DFW rate. This DFW rate is the eighth-highest rate for any class on campus. Chem I is a huge class, something like 40% of all students take it, and that means that students received more Ds, Fs, and Ws in Chem I than they do in any course on campus, excepting only College Algebra.

Getting into trouble in Chem I has a huge impact. If you get a DFW in Chem I, your chances of graduating in four years are 15.6% and the six-year grad rate is 40.2%. In contrast, if you don’t take Chem I at all, your chances of graduating in six years are 58.9%. On the other hand, if you take Chem I and get an A, B, or C! You have a 78.1% chance of graduating in six years. Say that we could increase the graduation rate for those students who receive a DFW in Chem I to the rate of those who don’t take Chem I. Had we done this for the 2009 cohort, the current six-year graduation rate would be, at 64.7%, 2.2 percentage points higher (and 3.5% higher) than the actual, 62.5% rate. If we got the grad rate for Chem I DFWers up to that of Chem I ABCers? The university’s graduation rate would be, at 66.7%, 4.2 percentage points higher than the actual, 62.5% rate. If we don’t take Chem I. Had we done this for the 2009 cohort, the current six-year graduation rate would be, at 64.7%, 2.2 percentage points higher (and 3.5% higher) than the actual, 62.5% rate. If we got the grad rate for Chem I DFWers up to that of Chem I ABCers? The university’s graduation rate would be, at 66.7%, 4.2 percentage points higher than the actual, 62.5% rate. That would be a big impact indeed.

Obviously, lowering our standards and handing out A, B, and C grades wouldn’t address either the root problem or teach students chemistry. Instead, we are trying to make sure that only students who are properly prepared for Chem I are taking it. For years, College Algebra has been listed as a pre- or co-requisite for Chem I. Not surprisingly, poor performance in College Algebra is a good predictor of poor performance in Chem I. Taking these two classes at the same time means that you are trying to simultaneously learn algebra and apply it in chemistry and, well... let’s just say that is probably not a recipe for success. Therefore, the faculty have voted to make Algebra a pre-requisite and no longer allow students to take Chem I at the same time. This change is still in the works and not yet official policy, but we have been aggressively advising students not to take both these classes at the same time. Our drop in Chem I enrollment is due to the fact that very few students are co-enrolled this semester compared to last year. We fully expect to see our enrollment in University Chemistry I spike in the Spring after students (hopefully) successfully complete College Algebra and then move on to chemistry. It is our hope that by delaying enrollment in chemistry by one semester, rather than delaying graduation, we actually make it more likely that students will get out of here with a degree in hand in a timely fashion.

While our focus is often on our majors, our grad students, and our research, we are mindful that our service teaching is important to the entire University. We teach one out of every twenty-six credits hours that the entire University delivers. We want to do everything we can to make sure that all students share the high graduation rates that chemistry majors enjoy.

Alumni Updates

After receiving her BS in biochemistry at the U of A, where she was an undergraduate member of the Fritsch lab, Caitlin Williams moved to Washington, DC, to pursue an MA in theology at the John Paul II Institute for Studies on Marriage and Family. Now entering her fourth year of a PhD program in theology at the JPII Institute, she is currently researching a dissertation on the Catholic philosopher Maurice Blondel, whose work revolves around the question of human destiny and the relation between finite and infinite thought, being, and action.

Theresa Nguyen, PhD 2016, accepted an NIH postdoctoral position at Southern Research Institute, Birmingham, Alabama.

Scott Morris, PhD 2016, accepted a process chemistry position at the WeylChem Group of Companies, Columbia, South Carolina.

Elizabeth Spahn, PhD 2016, has joined the Physical Sciences Department faculty at UA Fort Smith as a chemistry professor.
Discovery Hall Project on Track

The start of classes has brought the latest phase in the long-running renovation of Discovery Hall (better known to our alumni as the Science Building) to a close. We accomplished several important things. First, offices were renovated that will be the home for many of our instructors. Second, the horribly antiquated prep lab that supports our teaching labs in the building was completely gutted and made over. These pictures are of that new space. New hoods, new cabinets, a separate room for chemical storage, and more work space go along with new, and hopefully never-to-be-needed, eyewashes and safety showers. This brings our prep space back up to the level it was at before we had to cannibalize the prep lab on the third floor to meet expanded teaching demands. The addition of newly renovated teaching labs made over from space vacated by Biological Sciences was great, but for all the people working behind the scenes to support the labs, the renovation of offices and prep space is equally appreciated. We will have at least one more round of work starting as soon as classes end that will focus on the halls and restrooms. But the end of this ten year renovation process is growing closer.

Upper Left: New chemical storage space. Upper right and lower left show the new prep lab. Lower right: Dr. Chris Mazzanti works with graduate students Isabelle Niyonshuti and Collette Robinson in the newly renovated prep lab.
Ben Jones Receives Technical Training at the University of Utah

From July 17 to 31 this summer I travelled to the University of Utah in Salt Lake City and worked in the laboratory of Professor Shelley Minteer, a leading researcher in electrocatalysis and bioanalytical chemistry in the development and characterization of biofuel cells. My own research in the Fritsch group includes development of bioanodes and biocathodes on microelectrodes within an array for miniaturized biofuel cells. The Minteer group was willing and able to share their techniques in synthesizing novel electron mediating copolymers, preparing macro bioelectrodes and their characterization separately and together as a functioning biofuel cell. I was able to see and manipulate the different materials and systems that I had only learned about by reading their publications and attending their talks at the Spring 2016 ECS Meeting in San Diego. So much detail is involved in obtaining quality experimental data that it is impossible to include all the tips and tricks in the literature, even with supporting information. Being able to get hands-on experience with their equipment and receive one-on-one training in their techniques was of immense value. After a brief training period on the Minteer group policies and procedures I was able to carry out some of my own experiments involving a new monomer synthesis and functionalization of my own microelectrodes.

This trip offered innumerable benefits beyond the science and training itself. These include professional networking and stimulation of new research opportunities. I met and got to know the postdocs, graduate students, and undergraduate researchers working in the Minteer lab. They were kind, helpful, generous of their time, and I owe them thanks. I also met with Professor Marc Porter (department seminar speaker here at Arkansas in Fall 2015), spoke with him about his recent research, toured his lab, and began discussions about a possible future collaboration.

Another benefit of my trip was catching up with one of our own Fritsch group alumni, Vishal Sahore (PhD ’13, micro-EP)! Vishal is now a postdoctoral researcher with Professor Adam Woolley at Brigham Young University in Provo, UT. While discussing current research projects and plans for the future, we toured the beautiful terrain of Utah, venturing to Antelope Island, Park City, and Big Cottonwood Canyon. We got out of the laboratory long enough to enjoy the mountain climate and take some pictures.

I was also on an important mission to seek out connections with the ACS Student Affiliate group at the University of Utah. Prior to leaving for Salt Lake City, I contacted Professor Tom Richmond, one of the group’s faculty advisors, and set up an appointment to discuss best practices. Trends that extend across both student groups are that half of the participants are chemistry majors and comprise of mostly undergraduate students. One of the things that really stood out was that the U of U’s chemistry department is able to provide students with dedicated lab space to test out and perfect possible demonstrations for their community outreach programs. Professor Richmond emphasized the impact it has on the students, giving them a sense of ownership of the space, which in turn motivates them to produce excellent chemistry presentations. Also, their chemistry department’s schedule of classes is organized so that Friday afternoons are free of any advanced labs or coursework leaving that time open for ACS meetings and time in the demo lab. Professor Richmond informed me that over the course of the year their affiliate group presents to around five thousand students from elementary through junior high school levels. Their group is comprised of roughly 100 members with a very active core of about 20-25. Their financial support comes from the University of Utah’s student government, the chemistry department, and the local ACS chapter.

I want to thank Professor Ingrid Fritsch, Dean Kim Needy, and the local ACS affiliate for financial support of this impactful experience. To the PhD candidates that are reading this: I highly recommend applying for the recently announced dissertation research awards from the Fulbright College. You know that research group that you cite repeatedly throughout your publications and research proposals? Or the professor who gave the engaging talk at the recent conference you attended on exciting research they recently published that is closely related to your work? I encourage you to contact these researchers, express your interest in visiting their laboratory, and learn all you can from them as you work hard toward completing your projects. Graduate students in this department, college, and university are fortunate to have resources like this made available for the purpose of enriching their research experiences and dissertation.

Ben Jones

Vishal Sahore (PhD 2013, Micro-EP)
Undergraduate Summer Research Programs Conclude

The Department of Chemistry and Biochemistry was host to two summer undergraduate research programs. Sponsored by NSF and co-directed by David Paul and Julie Stenken, the 10-week REU program concluded July 28 with a “Meeting in Miniature” poster competition. Susan Campbell was presented with the Tony Jude Award for outstanding research. She worked in the Kumar lab.

Also under the direction of David Paul, the NIH sponsored INBRE summer research program ran 9 weeks and concluded July 20 with a poster competition at the Central Arkansas Undergraduate Research Symposium in Little Rock. Students from multiple summer programs, including Arkansas INBRE, presented their research results. Amanda Paz Herrera was presented with First Place in the poster competition, out of 91 student posters. She worked with Denise Greathouse during her time at the U of A. She attends the University of the Ozarks and is from Honduras.

Students, mentors, and research project titles were:

**INBRE at UA**
- **Mikiah Ballard**, UA Pine Bluff; Phenotypic Effects of Silencing Fatty Acid Desaturase 3 in Tomato. Dr. Fiona Goggin, Dept. of Entomology, mentor.
- **Enatha Ntirandekura**, UA Pine Bluff; Amyloid Beta Aggregation in Micelles and Bilayers Detected by Capillary Electrophoresis. Dr. Christa Hestekin, Dept. of Chemical Engineering, mentor.
- **Amanda Paz Herrera**, University of the Ozarks; Detection of Helix Fraying in Transmembrane Helices with Interfacial Histidine Residues. Dr. Denise Greathouse, Dept. of Chemistry & Biochemistry.
- **Hope Woods**, Lyon College; Effect of Exposure to Functionalized Graphene on Escherichia coli and Development of Toxicity Detection Tools. Dr. Ravi Baribote, Dept. of Biological Sciences.

**REU at UA**
- **Ronald Bercaw**, Oklahoma City University; title not available. Dr. Colin Heyes.
- **Susan Campbell**, Louisiana Tech University; Simplified Purification of GST-tagged Proteins. Dr. Suresh Kumar.
- **Carlie Clem**, Henderson State University; Optimization of the Click Reaction and the Sonogashira Coupling Reaction for Bioorthogonal Chemistry. Dr. Wei Shi.
- **Theophila Dusabamahoro**, Spelman College; Site-Specific Labeling of Proteins by Quantum Dots for Fluorescence Resonance Energy Transfer (FRET) Measurement. Dr. Colin Heyes
- **Harper Grimsley**, University of Arkansas; Regioselectivity and Activity of Ring-Opening Metathesis Polymerization Catalysts in Application to Homo-Coupling Olefin Metathesis. Dr. Stefan Kilyanek.
- **Lyndsie Kamps**, Calvin College; Toxicity of Commonly Used Essential Oils in Cosmetics. Dr. Jack Lay.
- **Rebecca Moffett**, University of Arkansas; Platinization of Microelectrode Arrays for Oxygen Evolution. Dr. David Paul.
- **Evan Noel**, Pittsburg State University; Stability of Wild Type and Mutant CDC42/ZCL278 Complex. Dr. Paul Adams.

Susan Campbell with her mentor Suresh Kumar. Susan attends Louisiana Tech University and is from McCaskill, Arkansas.

Amanda Paz Herrera with Dr. Roger Koepp, director of the Science Research Core.

Graduate students Alexa May and Kayla DeNike with Carlie Clem.
**New Instructor Joins Faculty**

**Dustin W. Demoin** graduated from Trinity University with a B.S. in Chemistry in 2005. He received a M.S. in Chemistry from the University of California at Berkeley in 2006. He graduated from Trinity University with a M.A. in Teaching (Grades 4-8 and 8-12) in 2007 with a Texas State Teaching Certificate for Grades 4-8 Science and 8-12 Physical Science. He taught high school chemistry for two years at John Marshall High School in San Antonio, TX. He attended the University of Missouri at Columbia from 2009-2014 to work with Prof. Silvia S. Jurisson and was awarded a Ph.D. in Chemistry for work synthesizing molecules to deliver radioactive metals to cancer sites for imaging and therapy. During this time he also performed quantum chemical computations to determine which molecules were best at delivering the metals in vivo. In 2012, he was named one of the outstanding radiochemistry graduate students at the University of Missouri. In 2014, Dustin was awarded a Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (NIH F32) and he worked in the laboratory of Prof. Jason S. Lewis from 2014-2016. While there, Dustin radiolabeled molecules (small organic molecules, peptides, and antibodies) for potential use in imaging cancer and evaluated them in mouse models utilizing ex vivo biodistribution and in vivo imaging. He performed fluorescence imaging of cancers utilizing peptides that were conjugated to fluorophores. He also radiolabeled and biotinylated an HIV antibody site-specifically on the heavy chain for evaluation of HIV-infected cells. He joined the faculty at the University of Arkansas in the Department of Chemistry & Biochemistry in the Fall of 2016 as a lecturer. He is currently a member of the American Chemical Society, World Molecular Imaging Society, and International Society of Radiopharmaceutical Sciences.


This paper was also the cover illustration (see left).

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**Samir Jenkins**, PhD ’15, sent in the joke below to share with the department. He is currently at UAMS working as a post-doc with Robert Griffin on cancer radiology.

**WHAT DO YOU CALL AN ACID WITH AN ATTITUDE?**

\[ \text{gimme ur lunch} \]

A-mean-oh acid.

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**Rory Henderson’s** figure was used as the cover art for the September 20, 2016 issue of Biophysical Journal. His paper citation can be found on page 2 of this issue of the Mole.
Denise Greathouse and Others Participate in *Sin Limites*

Denise Greathouse partnered with Luis Restrepo and Jeanette Arnhart, from the World Languages, Literature and Cultures Department at the University of Arkansas, to include a chemistry lab experiment, Isolation of DNA from Strawberries, in an academic enrichment program. Local middle-school students are participating in The *Sin Limites* (“No Limits”): Latino Youth Biliteracy Project. The *Sin Limites*, now in its 4th year, is an enrichment program that seeks to enhance students’ literacy in both Spanish and English while also introducing them to the idea of higher education. The *Sin Limites* program began as an after-school program at J.O. Kelly Middle School in Springdale, and was as extended to a two-week summer program in 2013. The program’s goals are to help students develop skills required for academic success, to break down barriers that may keep them from attending college, and to prepare them to live in a global society. "It opens up their eyes to the many possibilities," says Oscar Cardona, a U of A undergraduate majoring in Spanish and Latin American Studies, who served as a program mentor and volunteer. Roger Koeppe along with graduate students Ashley Martfeld Henderson, Venkatesan Rajagopalan, Matthew McKay, and Fahmida Afrose from the Chemistry and Biochemistry Department, and summer undergraduate INBRE student, Amanda Paz Herrera, facilitated the science lab on Friday, June 17, in the brand new Super Teaching Lab located in Discovery Hall. The middle-school students mashed strawberries with dish detergent, hot water and salt, filtered the mixture through coffee filters, and precipitated the DNA with ice cold ethanol. Visibly excited by the appearance of DNA, 12-year-old Jose Flores, perched on a lab stool and wearing a pair of oversized goggles grinned at his partner and exclaimed, “I’m a scientist!” Many thanks also to Latisha M. Puckett and the Chemistry department for the use of the chemistry labs. The program is sponsored in part by a 21st Century Community Learning Center federal grant, and by La Oficina Latina, The women’s Giving Circle, and Centennial Bank.

Replacement Parts Helicoptered In

The Chemistry building needed a big replacement part for one of the energy recovery wheels in one of the air handlers on the roof. A BIG part. Two, actually. So big, they had to be lifted into position on a Sunday morning by a helicopter. Two parts, two lifts removing old parts and bringing in new ones.

The odds that a chunk of metal and molecular sieves would be dropped and crash through an office or lab – well, they weren’t high. Low odds or not, it required vacating the building. The department was asked to not be in the building after midnight Saturday/Sunday. At 6 am Sunday, Dr. Stites, FAMA, and UAPD walked the building searching for anyone who had not gotten the word. The doors were guarded and no entry allowed other than the workers needed on the roof.

The lift was scheduled for 8:00 am and was done by 10:00 am.

Why a helicopter? Since we built a fancy gate on the north side of campus, we can’t get a big enough crane in to lift the parts that way. And moving the big crane in when we renovated tore up the lawn. CHBC and DISC were not closed.
Faculty Achievements

Two of our faculty members, Margaret Hershberger and Stefan Kilyanek, are being recognized by the chancellor and provost with a new faculty commendation at the University of Arkansas Faculty Teaching Awards reception on Tuesday, September 27th. New faculty members (first or second year faculty) teaching two or more classes are awarded commendations by earning university core teaching scores of 3.5 or better, and earning points through participation in events sponsored by the Wally Cordes Teaching and Faculty Support Center or the UA Teaching Academy. The program will be held at the Janelle Hembree Alumni House starting at 5:00 pm.

Question: What do Peter Pulay, Rudolph Marcus, John Pople, and Martin Karplus have in common?
Answer: They have all received the ACS Award in Theoretical Chemistry. Peter Pulay is the 2017 winner, “To recognize innovative research in theoretical chemistry that either advances theoretical methodology or contributes to new discoveries about chemical systems. A nominee must have accomplished innovative research in the field of theoretical chemistry. Emphasis in the selection process will be on work characterized by depth, originality, and scientific significance.”
The other three have the Nobel Prize in Chemistry. Hmm…. Congratulations Peter!

At the Annual Symposium for the Arkansas Biosciences Institute, September 13 in Little Rock, Susanne Striegler and Jingyi Chen received faculty awards.

- Dr. Striegler was awarded Investigator of the Year in the category of investigators who have received ABI research support within only the past four years.

- Dr. Chen was runner-up for Investigator of the Year in the category of investigators who have received more than four years of ABI research support.

Paul Adams was invited to deliver the Wabash College William & Wilma Haines Biochemistry Lecture February 1st and 2nd, 2017. His visit will consist of two lectures; one, a seminar on his research suitable for an undergraduate audience, primarily juniors and seniors, and the second, a public lecture on a topic of his choice that engages the campus community in the role of science. Past speakers have included Greg Petsko, Past President of the ASBMA and Professor of Neuroscience at Weill Cornell Medical College, Phillip Low, Ralph C. Corley Distinguished Professor of Chemistry and Director of the Purdue Center for Drug Discover, and Sarah Keller, Professor of Chemistry at the University of Washington.

MRS Reactivated

The Materials Research Society (MRS) local chapter has been reactivated and is actively preparing for the first quarterly meeting. The MRS is an organization of materials researchers worldwide that promotes communication for the advancement of interdisciplinary materials research and technology to improve the quality of life. The local chapter strives to build a dynamic, interactive, local community of materials researchers to advance technical excellence by providing a framework in which the materials disciplines can convene, collaborate, integrate and advocate. The new officers by appointment are President, Joshua Lochala (Chemistry); Vice President, Parker Cole (Cell & Molecular Biology); Secretary, Abayomi Omolewu (MicroEP); and Joseph Batta-Mpouma (MicroEP). The faculty advisors are Dr. Jie Xiao and Dr. Ryan Tian. If you have any questions or wish to get involved, email jalochal@email.uark.edu. For additional information on MRS visit www.mrs.org.

Students Pass 7th CUME

Kayla DeNike passed her seventh cume and cleared any deficiencies, and was admitted to candidacy September 9, 2016. Kayla got her BS from East Central University in Ada, OK and entered this program in the fall of 2015. She is a member of the Kilyanek lab. (left)

Mamello Mohale passed her required number of cumes and cleared any deficiencies, and was admitted to candidacy September 9, 2016. Mamello got her BS and MS from Rhodes University in Grahamstown, South Africa and entered this program in the fall of 2014. She is a member of the Heyes lab. (right)
## Calendar of Events

### October

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>Seminar: Dr. Fu-Sen Liang, Univ. of NM, 3:30 CHEM 144. Mammalian Cell Engineering via Chemical Reactivity Induced Protein Proximity</td>
<td>CHEM 144</td>
</tr>
<tr>
<td>08</td>
<td>Football Home Game against Alabama</td>
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<tr>
<td>10</td>
<td>Seminar: Dr. Rong Huang, VCU School of Pharmacy, 3:30 CHEM 144. Mechanism, Recognition, and Inhibition of Protein N-terminal Methyltransferase</td>
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<tr>
<td>15</td>
<td>Football Home Game against Ole Miss</td>
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<tr>
<td>17-18</td>
<td>Fall Break. Dept. offices open</td>
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<tr>
<td>21-22</td>
<td>INBRE Meeting; MASUA Meeting</td>
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<tr>
<td>28</td>
<td>CUME, 5:00 p.m. in CHEM 144</td>
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<tr>
<td>31</td>
<td>Seminar: Dr. Peng Wang, GA State University, 3:30 CHEM 144.</td>
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### November

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<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>05</td>
<td>Football Home Game against Florida</td>
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<tr>
<td>07</td>
<td>Seminar: Dr. Sean Burrows, Oregon State Univ., 3:30 CHEM 144</td>
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<tr>
<td>11</td>
<td>Football Home Game against LSU</td>
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<tr>
<td>18</td>
<td>CUME, 5:00 p.m. in CHEM 144</td>
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<tr>
<td>23-25</td>
<td>Thanksgiving Holiday</td>
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<tr>
<td>28</td>
<td>Seminar: Dr. Young-Hoon Ahn, Wayne State Univ., 3:30 CHEM 144</td>
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### Library Hours

**Fall Hours: August 21 - December 17**

<table>
<thead>
<tr>
<th>Day</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Saturday and Sunday</td>
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<tr>
<td>Monday - Thursday</td>
<td>8:00 am - 9:00 pm</td>
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<tr>
<td>Friday</td>
<td>8:00 am - 6:00 pm</td>
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</tbody>
</table>

### Exceptions to Fall Hours:

- **Friday, October 14**: 8:00 am - 5:00 pm
- **Monday - Tuesday, Oct 17-18**: 8:00 am - 5:00 pm
- **Tuesday - Wednesday, Nov 22-23**: 8:00 am - 5:00 pm
- **Thursday - Friday, Nov 24-25**: CLOSED
- **Friday, December 16**: 8:00 am - 5:00 pm


For more information: Check the Libraries' web site (http://libinfo.uark.edu) for updated information on hours and services. Library hours are also available by dialing 479-575-2557.

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The department of chemistry and biochemistry at the University of Arkansas strives for excellence in research, teaching and service in chemistry - the central science. We aspire to positions of leadership regarding the discovery of new scientific knowledge, the training of students, and the economic development of the State of Arkansas. We seek to recruit and retain a diverse group of the best faculty, students and staff to address the challenges of the future through interdisciplinary and multidisciplinary research and education.

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Safety Tip:

By Chris Mazzanti

Remember to clean up broken glassware in the sink immediately. Glass is hard to see in a wet sink.

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Our departmental web page is located at Fulbright.uark.edu/departments/chemistry/ There you will find links to departmental information, news, and people. But best of all, alumni can stay in touch through the Alumni & Friends link. We want our alumni to stay in touch! Please take a few minutes to browse the page and submit any update you’d like published (or not). We welcome pictures too!