

12-2014

## Mole Street Journal, December 2014

University of Arkansas, Fayetteville. Dept. of Chemistry and Biochemistry

Follow this and additional works at: <https://scholarworks.uark.edu/mole-street-journal>

---

### Citation

University of Arkansas, Fayetteville. Dept. of Chemistry and Biochemistry. (2014). Mole Street Journal, December 2014. *Mole Street Journal*, 13 (11) Retrieved from <https://scholarworks.uark.edu/mole-street-journal/91>

This Periodical is brought to you for free and open access by the Chemistry and Biochemistry at ScholarWorks@UARK. It has been accepted for inclusion in Mole Street Journal by an authorized administrator of ScholarWorks@UARK. For more information, please contact [ccmiddle@uark.edu](mailto:ccmiddle@uark.edu).

## Special points of interest:

- What happens when a half pound of sodium hits water in a lecture demo? Former faculty member Bob Kruh explains
- Alumnus Richard Briggs gives seminar
- Chen receives award
- Allison elected Chair of Campus Faculty
- Anthony Eller, Sturgis Fellowship
- Three students pass Cumes
- New Chapter for Electrochemical Society formed
- 3 receive ACS Certification

## Inside this issue:

Faculty News 2

From the Chair 3

Seminar News 4

Alumni News 5

Student News 6-7

CUME Dates posted 8

Calendar 8

## 2014 INBRE Conference a Success

The 2014 Arkansas NIH INBRE Conference featuring undergraduate research was hosted Nov 7-8 in Fayetteville by the Departments of Chemistry/Biochemistry, Biological Sciences and Physics. Record participation for the conference involved 477 registrants and 177 abstracts.

Invited faculty talks were presented by:

- \* Dr. Joel Funk, Assistant Professor in the Biology Department at John Brown University, Siloam Springs, AR.
- \* Dr. Andres A. Caro, Associate Professor in the Chemistry Department at Hendrix College, Conway, AR.
- \* Dr. Joseph Herzog, Visiting Assistant Professor in the Physics Department at the University of Arkansas, Fayetteville, AR.

The keynote speaker, Professor Paul Selvin of University of Illinois, captivated the audience with an animated presentation, "Your Body is Made of Trillions of Tiny Walking Molecular Motors." Dr. Selvin addressed several ways to learn about biological mechanisms using the methods of single-molecule physics. To measure the tiny steps taken by motor proteins, the Selvin lab members have invented a new form of microscopy, Fluorescence Imaging with One Nanometer Accuracy ("FIONA"). Needing a partner, FIONA found SHREC — Single-molecule High Resolution Co-localization — which extends the technique.



From among 120 undergraduate presentations, the following awards were presented:

### Physics:

- 1st Place Oral—Avery Hill, UA-Fayetteville
- 2nd Place Oral—Gavin Hester, Missouri State University
- 1st Place Poster—Joshua Grant, Southern Arkansas University
- 2nd Place Poster—Lafayette DeRamus, UA-Little Rock



### Biology:

- 1st Place Oral—Mary-Kate Williams, UA-Little Rock
- 2nd Place Oral—Kelley Ballard, Ouachita Baptist University
- 1st Place Poster—Baronger Bieger, Ouachita Baptist University
- 2nd Place Poster—Luke DeYoung, John Brown University



### Chemistry:

- 1st Place Oral—T. Ryan Roger, Univ. of Central Arkansas
- 2nd Place Oral—Lindsey Orgren, Hendrix College
- 1st Place Poster—Jennifer Rote, Rhodes College
- 2nd Place Poster—Hayden Pacl, UA-Fayetteville



Congratulations to each of the award winners!

Tentatively, the next Arkansas INBRE Conference is being planned for Nov 6-7, 2015, subject to the availability of funding, hotel rooms and meeting space.

Photos by Denise Greathouse

## Faculty News

### On the Go

**Z. Ryan Tian** made an oral presentation “New Science in H<sub>2</sub>O-to-H<sub>2</sub> Photolysis in Photoelectrochemical Cell (PEC)” at the NSF-EPSCoR Annual Conference, Little Rock, AR, Sept 4, 2014. This progress was recognized in the Conference as a broadly impacting breakthrough in 2013-2014 in both solar-cell and artificial photosynthesis fields.

Braden Henderson, **Andrew Zhou**, Simon Ang, **Z. Ryan Tian**, “Titanate Nano-Composite Electrode for Rechargeable Mg Ion Battery” (poster), NSF-EPSCoR Annual Conference, Little Rock, AR, Sept. 4, 2014. This new work was rated by Program Advisory Committee as the most interesting discovery due to its great potential to help Tesla Motors, the world leader in battery powered cars.

**Huajun Zhou, Tyler F. Chism**, Xiaodong Yang, **Z. Ryan Tian**, “Structure and function oriented multi-step nanosynthesis of arrayed hierarchical tree-like wide light-incidence-angle photocatalysts,” (poster) NSF-EPSCoR Annual Conference, Little Rock, AR, Sept. 4, 2014.

**Tyler Chism, Huajun Zhou, Z. Ryan Tian**, “ZnO Nanostructures’ new behavior in harvesting and converting solar-energy” (poster) NSF-EPSCoR Annual Conference, Little Rock, AR, Sept. 4, 2014.

**Hulusi Turgut**, Rachel Rogers, Cale White, **Z. Ryan Tian**, “Industry-viable graphene oxide based non-flammable, flexible, proton-conducting fuel cell membranes” (poster), NSF-EPSCoR Annual Conference, Little Rock, AR, Sept 4, 2014.

**Julie Stenken** gave two invited talks. “In vivo Microdialysis Sampling for Biochemical Quantitation of the Foreign Body Reaction” was presented September 30, 2014 at the SciX Meeting in Reno, NV. “In vivo Microdialysis Sampling of Cytokines in Subcutaneous Tissue and Brain” was presented October 28, 2014, at UT Austin in the Department of Pharmacology Seminar.

**Julie Stenken** served on an NIH Biomaterials and Biointerface (BMBI)

study section Oct 1-3, Annapolis, MD. **Nan Zheng** gave a talk “The Chemistries of Amine Radical Cations Enabled by Visible Light Photoredox Catalysis” at LSU on October 7, and then the same talk was given at the University of Tulsa on October 20.

**Pooja Bajwa** presented a poster “Multi-Shells vs. Gradient-alloyed Shells on Core Quantum Dots: Ensemble and Single Molecule Optical Properties” at the “From Abstract to Contract” poster session held Nov. 14 in Mullins Library. Co-authors are **Feng Gao, Benard Omogo**, and **Colin Heyes**.

### Publications

Dongshan Wei and **Feng Wang**. Graphene: A Partially Ordered Non-periodic Solid. *J. Chem. Phys.* (in press).

L Feng, A Sharma, DF Muresanu, R Patnaik, **ZR Tian**, HS Sharma. Nanowired Delivery of Mesenchymal Stem Cells (MSCs) Attenuates Pathophysiology of Spinal Cord Injury and Enhances Brain-Derived Neurotrophic Factor and Insulin-like Growth Factor-I Concentrations in the Plasma and the Spinal Cord. *Cell Transplantation* 2014, 23 (6), 769-770.

A Sharma, DF Muresanu, R Patnaik, H Huang, **ZR Tian**, H Moessler, HS Sharma. Superior Neuroprotective Efficacy of Nanodrug Delivery of Cerebrolysin Compared to Other Neurotrophic Factors in Concussive Head Injury. *Cell Transplantation* 2014, 23(6), 782.

**Julie A. Stenken** and Andreas J. Poschenrieder, Bioanalytical Chemistry of Cytokines - A Review. *Analytica Chimica Acta*, doi:10.1016/j.aca.2014.10.009.

**Geoffrey D. Keeler**, Jeannine M. Durdik, **Julie A. Stenken**. Localized Delivery of Dexamethasone-21-Phosphate via Microdialysis Implants in Rat Induces M(GC) Macrophage Polarization and Alters CCL2 Concentrations. *Acta Biomaterialia*, doi:10.106/j.actbio.2014.10.022.

**Crane, CC, J Tao, F Wang Y Zhu, J Chen**. Mask-Assisted Seeded Growth of Segmented Metallic Heteronanostructures. *J. Phys. Chem. C*

2014, accepted.

Dongshan Wei and **Feng Wang**. Graphene: A partially ordered non-periodic solid. *J. Chem. Phys.* 2014, 141, 144701.

### Recognition

Congratulations to Drs. **Colin Heyes** (tenured and promoted to Associate Professor), **Feng Wang** (tenured) and **Nan Zheng** (tenured and promoted to Associate Professor) in July, 2014. Please come to the CHBC Library to check out a poster highlighting their research accomplishments.

Earlier this year, Professor Emeritus **Lothar Schäfer** had a conversation with Eckhart Tolle, that has now gone on-line. You can find the conversation on: <http://www.echarttolle.com>. If you are interested, the website allows you one free access. After that you have to buy a membership.

**Paul Adams** served on an NIH Study Section at the meeting held in San Francisco, CA October 23-24. He was also awarded a Mini-Grant from the Protein Society to assist in Sponsoring the November INBRE Conference. **Roger Koepp** assisted with the application to the society.

In November 2014, Tap OChem, the iPhone animation app developed by **Neil Allison** and Joseph Allison for use by faculty and students outside of the classroom and faculty in the classroom, reached a milestone by being downloaded by students and instructors from a total of 50 countries. Countries include USA, China, Japan, UK, Ireland, France, Germany, Austria, Hungary, Czech Republic, Mexico, Brazil, Saudi Arabia, and India. A presentation about Tap OChem will be given at the next American Chemical Society meeting.



## From the Chair - Wesley Stites

At the annual staff recognition banquet, Heather Jorgensen, our departmental office manager, was recognized for her ten years of service to the University. Heather is responsible for all kinds of things including much of the academic scheduling, taking care of student problems getting into (or out of) courses, and getting everybody paid. Her quiet professionalism in the office is a key reason that all the behind the scenes administrative business of the department gets done in a timely manner. Also receiving a ten year service award was another person familiar to most of the faculty and students, Jeremy Smith, one of the chemistry librarians. In cases where people like Heather and Jeremy have been doing their jobs so well for so long, we can slide into complacency thinking that things would run smoothly around here by themselves. They don't. The hard work of all our staff members, preserving for students and faculty the illusion that many important tasks just fall into place, is greatly appreciated. So, congratulations to Heather and Jeremy for helping make the wheels turn here for the last ten years. We look forward to working with them and our other great staff members in the coming years.



We just heard from Dr. Robert Kruh, a former member of the chemistry faculty, former departmental chair, and former Dean of Arts and Sciences. The picture below is Dr. Kruh, lecturing in the big Chemistry lecture hall, today's room 132, circa 1959. I am sure many of our alumni recognize the black and red asbestos tile that used to be throughout the building. You may also recognize the gigantic illuminated periodic table. Bob Kruh and Wally Cordes were the driving forces behind getting this impressive piece of teaching technology up and running. Dr. Kruh tells us "We insisted that the switches on the control panel have no symbols, as chem profs are supposed to know the periodic chart from memory." The periodic table was there until the renovation of the building in 2004. The wall it was on had to be demolished partly to increase leg room (students in 1938 were shorter on average and the seat rows were closer together) and also because there was a fair amount of radioactive contamination in the space behind the boards that Bob is pictured at.

In this picture, from the diagrams on the board and the models, you can see he is lecturing about x-ray diffraction. He and Wally Cordes helped establish the technique here and we are still solving lots of crystal structures every year, both small molecule and protein. Dr. Kruh taught general chemistry to, among others, Alan Sugg, who, of course, went on to become the president of the UA System, before Don Bobbitt. Mary Good, now at UALR, was a grad student in Dr. Kruh's thermo and quantum chem classes.

He also told us of another former faculty member Kurt Stern "who had always wanted to drop a half pound of sodium in a tub of water. Almost blew out the windows of the Physics Building! Even with protective wear it left him shaken. Later there were unplanned pyrotechnics when benzene went ablaze in his lab sink. Never a dull moment! His serious work was doing molten salt chemistry, and he was an expert on Liesegang rings." I know what I want to do for my next class demonstration now!



Dr. Kruh came to the UA in 1952 after one year as an assistant professor at DePauw. He became Chair of the Department in 1963, but in 1964 was named Dean. He obviously did a great job, because, unfortunately for us, he was recruited away to Kansas State University where he filled a number of positions in upper administration before his retirement. It seems appropriate to note so close to Veterans Day that he served in a combat engineer battalion in Europe. His unit helped bridge the Rhine after the Ludendorff Bridge collapsed at Remagen. He told us that "We were part of Bradley's Twelfth Army Group, and he came to cut a ribbon allowing the waiting column of armor to thunder on to the East. Amusing touch in the middle of a war." Thanks Dr. Kruh for your service, both to the country and to the University of Arkansas Department of Chemistry! Dr. Kruh has shared a number of other interesting stories with us that we will share in future editions of the Mole. If you have a story about your time here or news about your personal or professional life, please share it.



## Upcoming Seminars



**Dr. Edward F. Valeev**, Associate Professor of Theoretical Chemistry at Virginia Tech, will present “Predictive Quantum Chemistry of Large Molecules” on December 1, 2014 at 3:30 p.m. in CHEM 144.



**Dr. John Turner**, Research Fellow at the National Renewable Energy Laboratory, will present “Challenges in Photoelectrochemical Water Splitting” on December 8, 2014 at 3:30 p.m. in CHEM 144.



Dr. Jin Zhong Zhang, Professor of Chemistry at the University of California Santa Cruz, will present a seminar at 3:30 p.m. January 26, 2015, CHEM 144. His title will be announced later.

## UA Chemistry Alumnus Richard Briggs Returns to Give Departmental Seminar

Richard W. Briggs received his B.S. from Kansas State College of Pittsburg in 1973. He then came to the University of Arkansas to work with University Professor James Hinton, who established NMR at the UA. Together, they developed TI-205 NMR spectroscopy as a powerful technique for characterizing the interaction of monovalent cations with biological systems. After completing his Ph.D. in 1978, he went to the University of Oxford to work with George Radda, and carried out pioneering research on the development of Magnetic Resonance Imaging (MRI). Dr. Briggs has been a Professor at Pennsylvania State University College of medicine, the University of Florida, the University of Texas Southwestern Medical Center, and is currently a Professor at Georgia State University. Professor Briggs is a pioneer in the development of Magnetic Resonance Imaging for the study of the brain.



## Chen Receives Award



**Jingyi Chen** was a recipient of a \$25,000 award given by the Women’s Giving Circle at its annual voting event on Friday, October 24. Chen is an assistant professor of chemistry and biochemistry who conducts research on non-invasive treatments of breast cancer. The award will be used for the development of new technology for breast cancer treatment, with the possibility of transferring the technology to other cancer and disease treatments. She is pictured at left accepting her check from Women’s Giving Circle president Martha Haguewood and Associate Vice Chancellor for Development Mark Power. The full article describing these events can be found on the UA Newswire at <http://bit.ly/1p5PcQp>

## Allison Elected Chair of Campus Faculty



**Neil Allison**, associate professor of chemistry, now serves as Chair of the University of Arkansas Campus Faculty for the 2014-2015 academic year. There were four candidates in the spring 2014 election and a majority of votes is required. This election starts a three year commitment for Neil. First, as chair of the Campus Faculty followed by chair of the Faculty Senate for the 2015-2016 academic year. He will

then serve as past-chair on the University of Arkansas Faculty Senate Executive Committee in 2016-2017. This is the second time Neil was elected as chair of the Campus Faculty with the first being in 2009 which corresponds to the first year that Dr. G. David Gearhart became the University of Arkansas Chancellor. The chair's duties include serving on the Academic Affairs Executive Group, the Catastrophic Leave Committee, and the Faculty Senate Executive Committee. Neil has been a faculty member in the Department of Chemistry and Biochemistry since the fall of 1980 and has been the Liebolt Chair of Premedical Sciences since 2002.

## Study Abroad in Sweden

The Health Teams Abroad study abroad course with 20 students studying health care in the United States and Sweden was again lead by **Neil Allison** (Chem & Biochem, Liebolt Premed Program), Fran Hagstrom (Assistant Dean College of Education and Health Professions), Jeanne McLachlin (Biology, Liebolt Premed Program), Mack Ivey (Biology), and Nan Smith-Blair (Nursing) included the chemistry undergraduate students Ashleigh Ellwood, Amy James, Jes Sanders, and Ryan Wendt. This year, an emphasis on health care for elderly patients included visits in the United States to Springdale health centers, Butterfield Trail Retirement Community, Washington Regional Medical Center along with comparable facilities in Sweden. It was a competitive year with over 70 applications for the class of 20.



## Health Coaches

A new University of Arkansas program, Health Coaches, is being offered under the Fulbright College, Liebolt Pre-medical Program, under the direction of **Neil Allison**, and College of Education and Health Professions. This program comprised of UofA students in chemistry and elsewhere, is taught by physicians and staff at Washington Regional Medical Center and places students with at-risk patients being released from Washington Regional Medical Center. An additional colleague, Dr. Casey Kayser, Department of English, who also teaches a medical humanities class, has been added to the Liebolt Program as the liaison for this program.

## Alumni News

BS alumni **Robert Wilkerson** (Sp2013) is currently enrolled in the PhD graduate program in the Dept. of Molecular Biosciences at the University of Kansas. He is from Morrilton, AR, and interested in Protein Structure/function, mutations.

### *Two of our alumni are now TV stars.*

Ok, maybe not 'stars'... but they have been on TV! **Jeff Froude**, who got his Ph.D. working with **Dr. Stites**, left Arkansas and went to active duty in the US Army. Jeff works at the US Army Medical Research Institute of Infectious Disease (better known to many by the acronym USAMRIID). This world famous research institute focuses on developing therapy and vaccines for some of the nastier diseases in the world that don't attract attention from the regular pharmaceutical industry. Jeff works on one of those projects, developing a vaccine for the Ebola virus. The Today show on NBC did a piece on this work and it prominently featured Dr. Froude, including an interview with him dressed in his isolation 'moonsuit' behind glass inside a Biosafety Level IV lab. Watch the interview here: <http://on.today.com/11Bcan>

By coincidence, **Chris Saunders**, his lab mate for much of their time here, also made his television debut about a month before. Chris is in his third year teaching chemistry at The College of Idaho. Dr. Saunders and a professor of physics were featured in a half hour show on Idaho public television. So, although Jeff got a national audience, Chris got a lot more screen time. The show, aimed at a younger audience than the Today show, aims to excite kids about science. Chris answers chemistry questions and does a lot of cool demonstrations. You can watch it here: <http://bit.ly/1v2zg2r>



## Student News

### Anthony Eller - Sturgis International Fellowship

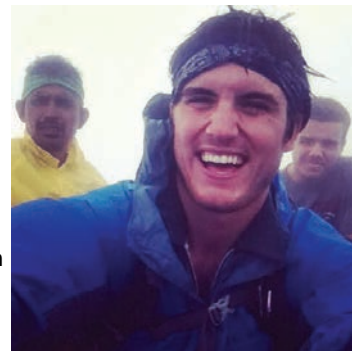
Biochemistry major Anthony Eller is away this year on a Sturgis International Fellowship. Anthony's project is intensive Spanish in Puntarenas, Costa Rica, followed by a semester in Panama working in the area of Global Health. When asked to describe his experience, he submitted the following:

"Currently I am abroad in Puntarenas, Costa Rica participating in a true intensive Spanish immersion program. I have classes five days a week in Spanish and am living with host family blocks away from my school, who don't speak any English. Coming here simply knowing "hola" and how to order a cheeseburger, I quickly had to adjust to life in a foreign culture and learn my Spanish. While not in class or with my family, I am volunteering at a nearby elementary school teaching English to some crazy 2nd graders or helping tutor my host mothers students and friends at our house. During the weekends, with our school and on our own, my classmates and I have been traveling to national parks and other areas of the country hoping to learn and experience everything there is to offer in Costa Rica.

After my time in Costa Rica I will be heading to Panama City to start the other part to my fellowship experience, the global health aspect. This part will expose me to the pitfalls of current international public health as well as allow me to view the treatment and care of the underserved communities. Something of which I hope to get into after school. The plan is for me to start in Panama City involving myself with the government and political side of health care, seeing how law and policy is enacted. From there I will travel to numerous clinics, NGO's, and hospitals, throughout the country observing and noting the quality and efficiency of their healthcare delivery. To round out the trip, I will be traveling down to the southern part of the country into the mountains of the Darien Province where I will be working with and observing the indigenous people of the area and their shamanistic/naturalistic approach to medicine and healing. Throughout the extent of my travels in Panama I will be interviewing people at each of the different places I will be in, hoping to obtain a better understanding of how to best serve the underserved and underprivileged of our world.

With hopes of becoming a doctor down the road once I graduate, I also hope to find myself making a difference in the field of international and public health. Having seen and learned about the discrepancies in medicine between first world countries such as Sweden, and third world countries such as Honduras, I have become motivated to fight the issues that plague those of less fortunate areas. By learning Spanish and observing healthcare in impoverished settings with scarcely limited resources, I hope to become better prepared to serve the underserved inner-city communities of our country as a practicing physician and help fix the problems of our current healthcare system.

None of this experience would have been possible without the funding of the Honors College and the Sturgis International Fellowship. I am so fortunate to be on this life-changing journey and hope to build bridges with our university and the people of Panama."



### Passed 7th Cume Exam



**Eric Barber** entered the program in the fall of 2012. He received his BS from Harding University and is from Floral, AR. His advisor is **Wei Shi**.



**Foyshal Khan** entered the program in the fall of 2013. He received his BS from the University of Dhaka, Bangladesh, which is also his home town. His advisor is **Ingrid Fritsch**.



**Matthew Moudy**, from Burkburnett, TX, entered the program in the fall of 2012. He received his BS from Midwestern State University in Wichita Falls, TX. His advisor is **Wes Stites**.

## Electrochemical Society Chapter Established

A new chapter of the Electrochemical Society (ECS) was recently created here at the U of A. So far, the group has been awarded chapter status by the ECS and is working to become an official RSO with the university. The group has had two official meetings this semester in which they voted on officers and worked with students to get their own membership through the ECS. Our own Dr. Fritsch and Dr. Paul helped to get the group started along with other faculty in other departments.

This group is made up of students and faculty from the departments of Chemistry, Engineering, Microelectronics and Photonics, and Physics and is open to anyone majoring in a STEM field with at least a 2.5 GPA.

The group already has a few events lined up this year including helping host a Chemistry Department seminar speaker (Dr. John Turner from the National Renewable Energy Laboratory on December 8th) and helping with the Northwest Arkansas Regional Science and Engineering Fair coming to the university March 2015.

For more information please email the chapter President, Perry Grant (pcgrant@uark.com) or your own chemistry department representative chapter Secretary, Marissa Reynolds (mkr004@uark.edu).

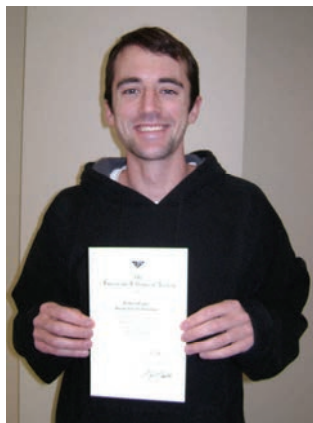


## Three Graduate with ACS Certification

The American Chemical Society has recognized three graduates from May, 2014 as recipients of degrees with ACS Certification. Awardees are **Megan Wary, Hans Wang,** and **Robert Engler**, who is pictured below receiving his certificate.

The certified chemistry degree program is typically more rigorous than the noncertified chemistry degree program, and it may often require a larger commitment of time to complete. The benefits of certification extend well beyond the personal challenge. The extra rigor and additional requirements of the certified degree are valued by potential employers and graduate schools alike.

The availability of an ACS-approved program in chemistry means that our institution is committed to providing students with a broadly based and intellectually challenging experience in chemistry.



## Students as Missionaries

**Jacqueline and Scott Morris** went to India during October for another mission trip with Cross Church. They visited very poor villages in Patna, Bihar, India. Bihar is a very poor part of India and the majority of the population is uneducated there. It is often forgotten about by the government, so that's why they chose to work there.



They also taught Indian believers and church planters that live there how to live biblically. They loved on children at various schools and churches that their church supports. The national missionaries that live there took them around their villages and allowed them to encourage them in their job as missionaries in India.

## Bajwa Presents Research



**Pooja Bajwa** participated in the "From Abstract to Contract" poster session held Nov. 14 in Mullins Library. Please see page 2 for title and authors.

## Milestones

Emma Lynn James was born to Mariana and Jacob James on October 30th. Proud grandparents **David and Victoria Hayes**.





THE MOLE STREET JOURNAL IS AN  
INTERNAL PUBLICATION OF THE  
DEPARTMENT OF CHEMISTRY AND  
BIOCHEMISTRY  
CHAIR, WESLEY STITES  
LESLIE JOHNSON, EDITOR

Mailing Address  
CHEM 119  
University of Arkansas  
Fayetteville, AR 72701

Phone: 479-575-4601  
Fax: 479-575-4049  
E-mail: cheminfo@uark.edu

We're on the web!  
chemistry.uark.edu/4842.php  
&  
Department of Chemistry and  
Biochemistry University of  
Arkansas

## Safety Tip: by Bill Durham

Laboratory audits are frequently finding that the eye wash stations are not being routinely checked. Please consider developing the habit of checking the station. The reason for the concern is the possibility of introducing pathogens into a cut or burn in the eye.



Department of Chemistry  
and Biochemistry

## Excellence in the Central Science

### Calendar of Events

#### December

- All month - 3-5 p.m. Flu Vaccine Walk-in Clinic, Pat Walker Health Center, M-F, no appt. necessary
- 1 Seminar: Edward Valeev, VA Tech - 3:30 p.m.
  - 1 Application deadline for students who plan to graduate at the end of Fall
  - 5 Final copies of MS and PhD thesis/doctoral dissertations must be submitted to the Graduate School for Fall Graduation
  - 5 CUME - 5:30-6:30, CHEM 144
  - 8 Seminar: John Turner, National Renewable Energy Laboratory, "Challenges in Photoelectrochemical Water Splitting"
  - 11 Last day of classes
  - 12 Dead Day - Departmental Pot Luck lunch
  - 15-19 Final Exams
  - 20 Fall Commencement
  - 24 - 31 Campus Closed (Dec 30, 31 staff charged to annual leave)

#### January

- 1 New Year's Day, Campus closed
- 2 Campus closed (staff charged to annual leave)
- 3 January Intersession classes begin at 7:30 a.m.; end January 10
- 12 Classes begin, 7:30 a.m.
- 19 Martin Luther King Day, campus closed
- 26 Seminar: Jin Zhong Zhang, University of California

### CUME Dates Announced

#### Fall CUME Dates:

December 5  
5:30-6:30 p.m., CHEM 144

#### Spring CUME Dates:

January 23  
February 13  
March 13  
April 3  
April 24

TIME & PLACE TBA

**NOTICE:** The Mole is moving to a bi-monthly format. Our next publication will be at the first of February, and will cover news that happens during December and January. Please continue to submit news articles in a timely fashion each month.



#### Save the Date!

The 2015 INBRE conference will be held November 6-7 in Fayetteville, AR.

*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 multi-disciplinary research and education.*

### Library Hours

CHBC Library (CHEM 225)  
<http://libinfo.uark.edu/chemistry>

#### Fall Semester Hours: August 24-December 19

##### Regular Fall Hours

Saturday and Sunday	CLOSED
Monday – Thursday	8:00 am – 9:00 pm
Friday	8:00 am – 6:00 pm

##### Exceptions to Regular Fall Hours

Friday Dec 19	8:00 am - 5:00 pm
---------------	-------------------

##### Interim & Winter Break: December 20-January 2

Saturday – Sunday Dec 20-21	CLOSED
Monday – Tuesday Dec 22-23	8:00 am – 5:00 pm
Wednesday - Friday Dec 24-Jan 2	CLOSED

The chemistry and biochemistry library resources can be accessed in the following LibGuides: <http://uark.libguides.com/content.php?pid=110953>. Please bookmark for future use. Theses and dissertation resources can be found on the following LibGuide: <http://uark.libguides.com/content.php?pid=123035&sid=1057466>.

