

The Mole Street Journal

Department of Chemistry and Biochemistry

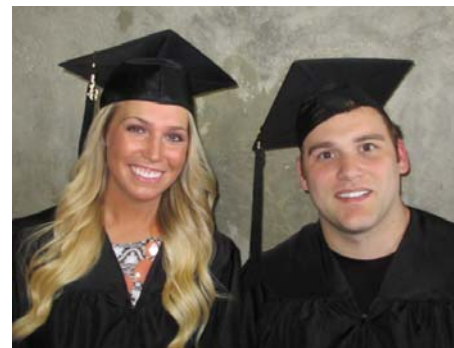
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Spring Commencement - 2013

The J. William Fulbright College of Arts and Sciences held its spring commencement ceremony May 11, 2013 in Bud Walton Arena. The names and degrees for undergraduates will be announced in the department as soon as the list is released. Master's level students included Brett Spahn, Eric Taylor, and Osman Uner.

Students receiving the Ph.D. are Evgenia Akhmetova, Elizabeth Emerson, Roland Njabon, Juliette Rivero-Castro, Maha Shrestha, Samrat Thapa, and Roger Williams. Congratulations!



Special points of interest:

- Honors Night
- Zheng gets CAREER award
- Barnett receives Fulbright grant
- Students defend, pass cumes
- Fulbright IT has a security tip

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Faculty News

On the Go

Ingrid Fritsch was an invited Key Note Speaker at The International Symposium on Electromagnetic Flow Control in Metallurgy, Crystal Growth, and Electrochemistry at the Technische Universität Dresden in Dresden, Germany, March 25-27, 2013. The title of her talk was "Redox-Magnetohydrodynamic Microfluidics."

Christena Nash and **Ingrid Fritsch**, Redox-Magnetohydrodynamic Pumping and Stirring with PEDOT-Modified Electrodes. 245th ACS Meeting, New Orleans, LA, April 7-11, 2013.

Mengjia Hu and **Ingrid Fritsch**, Detection of Dopamine in the Presence of Interferents using Redox Cycling. Poster presented at the 223rd Meeting of the Electrochemical Society, Toronto, Canada, May 12-17, 2013.

Prreston Scrape and **Ingrid Fritsch**. Tuning Magnetoconvective Flow in a Redox-Magnetohydrodynamic Microfluidic System. Poster, 223rd Meeting of the Electrochemical Society, Toronto, Canada, May 12-17, 2013.

Jes Sanders and **Dawn Weir** will be participating in the Okayama University Medical Research Exchange Program. They will spend 3 months in Okayama, Japan researching in Osamu Matsushita's lab and participating in anatomy and bacteriology classes. Both are recipients of Honors Travel grants.

Feng Gao, **Chase Ross**, **Jasmine Brown**, **Alicia Kight**, **Ralph Henry**, **Robyn Goforth**, **Colin Heyes**. Studying protein-protein interactions in the chloroplast signal recognition particle by ensemble and single molecule FRET. Poster presented at the 245th annual ACS meeting, New Orleans, LA, April 7-11, 2013.

Publications

Chen S, **Jenkins SV**, **Tao J**, **Zhu Y**, **Chen J**. Anisotropic Seeded Growth of Cu-M (M=Au, Pt, or Pd)

Bimetallic Nanorods with Tunable Optical and Catalytic Properties. *J. Phys. Chem. C* 2013, 117, 8924-8932.

Huajun Zhou, **Z. Ryan Tian**. Semiconductive catalysts with three-dimensional nanobranches from solution syntheses. Chapter 20 in "New and future developments in catalysis: catalysis by nanoparticles," S.L. Suib Eds, Elsevier Publisher, in print.

Katherine Self, **Huajun Zhou**, **Heather F. Greer**, **Z. Ryan Tian**, **Wuzong Zhou**. Reversed crystal growth of ZnO microdisks. *Chem. Commun.* 2013, 49, 5411-5413.

Huajun Zhou, **Z. Ryan Tian**. Recent advances in multiteop solution nanosynthesis of nanostructured three-dimensional complexes of semiconductive materials. *Progress in Natural Sci: Mater. Int.* 2013, DOI:10.1016/j.pnsc.2013.05.005.

Feng Gao, **Adam Kreidermacher**, **Ingrid Fritsch**, **Colin Heyes**. 3D Imaging of flow patterns in an internally-pumped microfluidic device: Redox magnetohydrodynamics and electrochemically-generated density gradients. *Analytical Chemistry* 2013, 85, 4414-4422.

Vasicek TW, **Jackson MR**, **Poseno TM**, **Stenken JA**. In vivo microdialysis sampling of cytokines from rat hippocampus: comparison of cannula implantation procedures. *ACS Chem. Neurosci.* 2013, Volume 4, 737-746.

Stites Serves on Army Science Board

The Army Science Board (ASB) is a Federal Advisory Committee organized under the Federal Advisory Committee Act. It is the Dept. of the Army senior scientific advisory body that was chartered in 1977 to replace the Army Scientific Advisory Panel. The ASB advises and makes recommendations to the Secretary of the Army, the Chief of Staff of the Army, the Asst. Secretary of the Army for Acquisition, Logistics and Technology, the army staff, and major Army commanders on scientific and technological matters of concern to the Army. **Wesley Stites** is in his second year of a study on the future of Army Science & Technology. He is a vice-chair of the study with lead responsibility for examining S&T efforts that are related to the PEO (Program Executive Office) Chemical and Biological Defense, Soldier, and Simulation, Training, and Instrumentation. (cont. on page 3)

Aggarwal A, **Hu M**, **Fritsch I**. Detection of excel ascorbic acid at physiological concentrations through redox cycling at an unmodified microelectrode array. *Anal. Bioanal. Chem.* 2013, 405(11), 3859-3869, DOI: 10.1007/s00216-013-6738-z.

Scrape PG, **Gerner MD**, **Weston MC**, **Fritsch I**. Redox-magnetohydrodynamics for microfluidic control: Remote from active electrodes and their diffusion layers. *J. Electrochem. Soc.*, 2013, 160, H338-H343, DOI:10.1149/2.076306jes.

Hayes, David and **Bozena Widanski**. The Hazardous-Drums Project: A multiweek laboratory exercise for general chemistry involving environmental, quality control, and cost evaluation. *J. Chem. Educ.* 2013, 90, 473-474.

Patent Awarded

J Sakon, **O Matsushita**, **R Gensure**. U.S. Patent Application No. 12/594,547. TITLE: Fusion Proteins of Collagen-Binding Domain and Parathyroid Hormone.

Honors

Ingrid Fritsch, **Joshua Sakon**, and **Ryan Tian** were three of several U of A entrepreneurs who were inducted into the National Academy of Inventors on May 1, 2013.



Stites (cont'd. from p. 2)

In the last 6 months, Stites has made numerous trips to Washington DC, More recently, he has been to TRADOC (Training and Doctrine Command, Ft. Eustis), US Southern Command (Miami, FL), USPEO Soldier (Ft. Belvoir), Natick Soldier Systems Center, Army Research Laboratory, Edgewood Chemical Biological Center, US Army Medical Research Institute for Chemical Defense, and JPEO Chemical Biological Defense (all at Aberdeen Proving Grounds), US Army Medical Research Institute for Infectious Disease, Army Medical Research and Materiel Command, and National Biodefense Analysis and Countermeasures Center (all at Ft. Detrick).

While at Aberdeen he got to briefly see one of our recent graduates, Dr. Jeff Havens, now Capt. Havens, assigned to the US Army Medical Research Inst. for Chemical Defense. At Ft. Detrick, he saw Dr. Jeff Froude (Capt.), assigned to the US Army Medical Research Institute for Infectious Disease. Both report doing well.

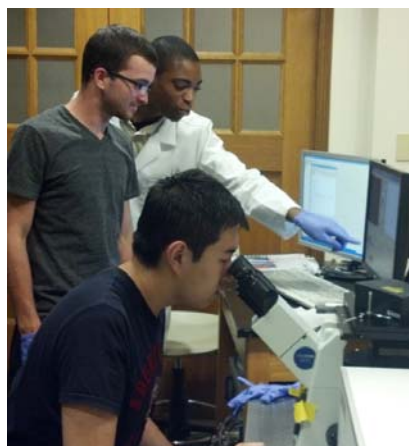
The board has interviewed dozens of military and civilian personnel in the Army and other services. It has been an amazing experience and a big responsibility. The ASB will meet in Ft. Carson in July to write their final report. It will be briefed to the Secretary of the Army and other senior Army leaders in September.

Annual Department Canoe Trip

Canoes were launched at Steele Creek, and lunch was eaten at Big Bluff. The weather was perfect, in the middle 80s, and the river was a bit low, but canoe-able. There was great swimming at Jim Bluff, and showers under Hemmed-in-Hollow Falls. After some excitement canoeing through Hell's Half Acre and Grey Rock, the trip concluded at Kyle's Landing. The distance on the river was about 7.7 miles.



Heyes Hosts Workshop



Above: Dillon, Elrin, and Yoon-sang at the microscope.

As part of his NSF CAREER grant, **Colin Heyes** hosted a 2-233k workshop (May 20-May 31) for undergraduates coming to his lab and performing recently published experiments on his fluorescence Correlation Spectroscopy, Microfluidic Devices, Fluorescence Resonance Energy Transfer, Fluorescence Lifetime Imaging, Quantum Dot Synthesis and Transmission Electron Microscopy. Participating students were Dillon Clayton (Arkansas Baptist College), Elrin Williams (Arkansas Baptist College), Yoonsang Sam Hahn (The Ohio State University), Summer Laffoon (Arkansas Tech University), and Marissa Reynolds (Arkansas Tech University). Their time spent here was not all work. They were also treated to a trip to see Crystal Bridges Museum and the travelling Norman Rockwell exhibit.



Right: The Heyes group at Crystal Bridges. From Left to Right: Elrin Williams, Colin Heyes, Marissa Reynolds, Dillon Clayton, Ashley Howard, Yoon-sang Hahn, Collette Robinson, Benard Omogo, and Feng Wang. Summer Laffoon is not pictured.

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Safety Tip: by Bill Durham

The long standing MSDS
is being replaced by
SDS; same idea but with
more uniformity.


Department of Chemistry
and Biochemistry

Excellence in the Central Science

Quick Security Tips from IT

Are you travelling this summer? Are you taking your laptop or mobile device (or both) along with you? Here are some useful steps for securing your technology before traveling to promote an enjoyable time away with reduced technical headaches.



1. Don't forget to perform a backup of any and all important data to trusted storage media in a separate location.
2. Enable and remember strong passwords or passcodes on all devices.
3. Safeguard any and all accounts and passwords you'll need to use while traveling.
4. Physically safeguard any and all technology at all times to avoid theft, loss, and/or damage.
5. Make sure to fully update the operating systems, antivirus, and other installed software to help virtually protect the machine on public networks.
6. Use safe browsing practices when on public networks.
7. When conducting university business, ALWAYS use the campus VPN to reach UARK resources to heighten network security.

Other critical steps to protect your computer:

1. Make sure to use the appropriate current antivirus software provided by the UA.
2. Make sure your Windows, Apple, or Linux systems are fully patched.
3. Ask your tech support for assistance on Fulbright owned machines. We can assist you before you leave and many times, we can assist or advise while you're away. arscsup@uark.edu, 479-575-7512.
4. Always keep your account(s) and password(s) safeguarded!

In other news, **Chris Clanton** and **Sean O'Bryan** attended the Managerial Leadership Series through Walton College ALPHA Institute.

Two of the hourly IT staff received their bachelor's degrees on Saturday, May 11. **Devin Haughey** earned a BA in German. He is furthering his education and plans to earn a BA in Computer Science in Dec. 2013.

Ronesha Sharma earned her BS in Business Administration in Information Systems from the WCOB.

Both graduates will continue working for the Fulbright IT office for now as they each navigate this new phase of their lives. Please congratulate them if you see them! We're very proud of their achievements and immense hard work.

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.

Calendar of Events

June

- 16 Father's Day
- 21 First Day of Summer
- 30 Annual Academic Review form due in Grad School for all Grad students



Save the Date!
The 2013 INBRE conference
will be held October 18-19
in Fayetteville, AR.

Library Hours

CHBC Library (CHEM 225)
<http://libinfo.uark.edu/chemistry>
575-2557

Summer Semester Hours, June 2013—July 2013

- | | |
|-----------------|---------------|
| Monday—Thursday | 8 a.m.-6 p.m. |
| Friday | 8 a.m.-5p.m. |
| Saturday—Sunday | 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>.

