8-2016

Mole Street Journal, August 2016

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

UNIVERSITY OF ARKANSAS
J. WILLIAM FULBRIGHT COLLEGE OF ARTS & SCIENCES

The Mole Street Journal

Department of Chemistry and Biochemistry

Volume 15, Issue 4 August 2016

Special points of interest:

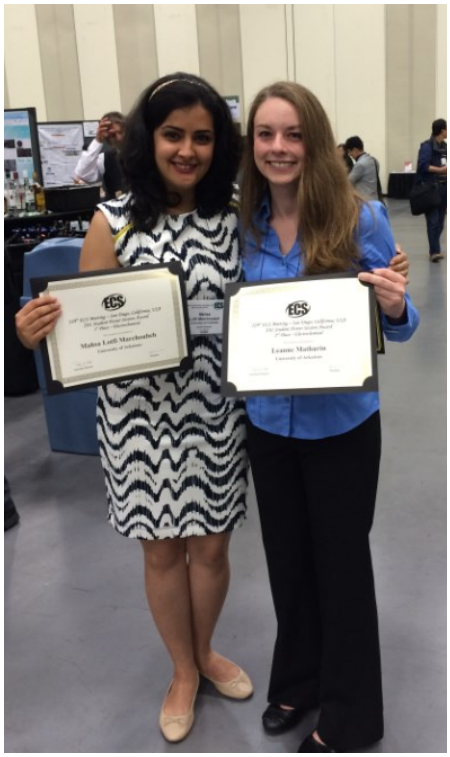
- Students take awards at Electrochemistry Society Meeting
- Discovery Hall Transition
- Chemistry of Cooking
- Cordes Award

Inside this issue:

Graduate Students Take Awards at the Electrochemistry Society Meeting

Arkansas cleaned up the poster awards in the area of "electrochemistry" at the 229th Electrochemical Society Meeting in San Diego, May 29 - June 2. First place went to **Mahsa Lotfi-Marchoubeh** and second place was awarded to **Leanne Mathurin**. They appeared in "photo of the day," a feature of the daily announcements section of the meeting's newsletter. Mahsa is directed by Ingrid Fritsch, and Leanne is a student of **Jingyi Chen**.

Professor **Ingrid Fritsch** reported from the conference that she had heard the most complimentary statements from the judges. All of the UA presenters were so good that the decision from the judges was unanimous. They also commented that all the posters from Arkansas were alsovery good. Poster presenters were **Mahsa Lotfi-Marchoubeh**, **Leanne Mathurin, Jonathan Moldenhauer, Foysal Khan, Ben Jones,** and Casey Einfalt (Ingrid's 2015 REU student from John Brown University). The first year graduate students who were also a part of the group were **Jazlynn Wisener, Aaron Nicholson, James Lowe,** and **Zeb Schichtl.** Please see page 2 for poster titles.



Mahsa Lotfi-Marchoubeh and Leanne Mathurin with their 1st and 2nd place certificates.

The ECS meeting is a forum for sharing the latest scientific and technical developments in electrochemistry and solid state science and technology. Scientists, engineers, and industry leaders come from around the world to attend the technical symposia, poster sessions, professional development workshops, networking opportunities, and social events offered at the meetings.

More pictures appear on page 7

L-R: Jon Moldenhauer, Professor Ingrid Fritsch, Dr. Christian Amatore (Director of Research at the French National Center for Scientific Research), Mahsa Lotfi-Marchoubeh, and Leanne Mathurin.

Faculty News

On the Go

Wei Shi presented a poster at the Bioorganic Chemistry Gordon Research Conference, held at Andover, NH, June 5-10. "Exploring the mode of action of ipomoeassin natural glycoresins." Authors are **Zhijian Hu, Guanghui Zong, Hazim Aljewari,** Jianhong Zhou, Yuchun Du, and **Wei Shi**.

Benjamin Jones presented a poster "Aqueous Co-Electropolymerization of Thieno[3,4-b]-1,4-dioxin-2-methanol and A Synthesized Derivative," co-authored by **Ingrid Fritsch**, at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2.

Mahsa Lotfi-Marchoubeh presented a poster "Redox Cycling Behavior of Catecholamines and Their Mixtures at Diffusion Distances: Steps Toward Quantitative Speciation" at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2. It was co-authored by **Mengjia Hu** and **Ingrid Fritsch.**

Leanne Mathurin presented a poster "Electrochemical Study of Trimetallic Nanostructures for Methanol Oxidation" at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2. It was co-authored by **Jingyi Chen.**

Jonathan Moldenhauer presented a poster, co-authored by **Madeline Meier** and **David Paul**, "Rapid and Direct Determination of Diffusion Coefficients using Microelectrode Arrays" at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2.

Foysal Khan presented "Materials Study for Optimization of Redox-Magnetohydrodynamics (R-MHD) for Pumping in Microfluidics Systems," co-authored by **Ingrid Fritsch**, at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2.

2015 REU student **Casey Einfalt** presented his UA research "Enzyme Modified Microelectrodes toward Miniaturized Biofuel Cell Cathodes," co-authored by **Benjamin Jones** and **Ingrid Fritsch**, at the 229th Meeting of the Electrochemical Society in San Diego, CA May 29-June 2.

Jordana Thibado presented a poster, co-authored by **Ashley Henderson, Denise Greathouse, and Roger Koeppe,** at the 76th Physical Electronics Conference, University of Arkansas, Fayetteville, June 20-23. "Cholesterol Influence on Arginine-Containing Transmembrane Peptides." Jordana received first place in the student poster competition. She is a 2016 graduate and is currently a PhD student and National Science Foundation Graduate Research Fellow in the Department of Mechanical Engineering in the College of Engineering at Weill Cornell Medical College, where she is pursuing a doctorate in biophysics.

Lutishoor Salisbury. "Helping Patrons Identify "Free" Full-Text Resources in Agriculture," Food and Life Sciences, Poster presented at the United States Agricultural Information Network Conference, Gainesville, FL, April 26, 2016.

Lutishoor Salisbury. "Engagement in Scholarly Communication Activities among Science and Technology Librarians." Poster presented at the All Sciences and Poster Session, Special Libraries Association meeting, June 13, Philadelphia, PA.

Lutishoor Salisbury (head of CHBC Library). "Issues in Scholarly Communication: Highlights from Science and Technology Librarians." Paper presented at the United States Agricultural Information Network Conference, April 26, 2016, Gainesville, FL.

Lutishoor Salisbury. "Using Metrics to Help Faculty Showcase their Value." Paper presented at the Special Libraries Annual Conference, Quicktake Session. June 12, 2016, Philadelphia, PA.

Publications

Benard Omogo, Feng Gao, Pooja Bajwa, Mizuho Kaneko, Colin D. Heyes. Reducing Blinking in Small Core-Multishell Quantum Dots by Carefully Balancing Confinement Potential and Induced Lattice Strain: The "Goldilocks" Effect. 2016 *ACSNano* 10, 4072-4082.

Morris, J., S. Jayanthi, R. Langston, A. Daily, A. Kight, D.S. McNabb, R. Henry, **T.K.S. Kumar** (2016) Heparin-binding peptide as a novel affinity tag for purification of recombinant proteins. *Protein Expression & Purification*, 126, 93-103.

Salisbury, Lutishoor and **Gwendolyn Mattice.** 2016. Early exposure to the Scientific Research Process through Collaboration with Chemistry Faculty and the Science Librarian. *Science and Technology Libraries*. 35(2), 119-135. http://www.tandfonline.com/doi/pdf/10.1080/0194262X.2016.1162118. DOI:10.1080/019426X.2016.1162118.

Salisbury, Lutishoor and Julie Speer. 2016. Science and Technology Librarians: User Engagement and Outreach Activities in the Area of Scholarly Communication. *Issues in Science and Technology Librarianship, Winter.* http://www.istl.org/16-winter/refereed4.html DOI:10.5062/F45X26ZR.

Honors and Awards

Mahmoud Moradi has been awarded a computational allocation on Blue Waters supercomputer, the fastest supercomputer on any university campus. This allocation will be specifically used for thermodynamic characterization of conformational landscape in proton-coupled oligopeptide transporters. Four hundred eighty thousand node-hours of compute time awarded by the Great Lake Consortium for Petascale Computing is the first major allocation granted on this resource to a researcher in the state of Arkansas. Blue Waters, a $208M NSF project, housed at the National Center for Supercomputing Applications, University of Illinois, is considered the flagship of the NSF computing arsenal and is designed as a "capability" machine to run large-scale simulations, which cannot be performed on other NSF resources.

From the Chair ~ *Wesley Stites*

The most exciting thing I have to share is the recent generous gift of Betty Blyholder to further endow the student fellowship honoring our late colleague, George Blyholder. As many of you know, George was a pre-eminent experimentalist in physical chemistry. Last year I mentioned George published his classic paper "Molecular Orbital View of Chemisorbed Carbon Monoxide" in 1964. I just looked and it now has over 1,500 citations including 24 in just the first six months of this year! Betty gave us the initial gift last year to establish this award to a student who is specializing in physical chemistry. This additional endowment will make it possible for us to award it more frequently. We thank the Blyholders and others who have contributed in George's memory.

As summer draws to a close, you might think that we are busy planning for the fall. Well, that is true to some extent. Our hard-working office staff are making some last minute course corrections to make sure everything goes smoothly on the first day of classes. Just today as I write this, we had an instructor who was going to teach a large course get and accept a permanent job. We are thrilled for her, but we are scrambling to cover the teaching of the course. But in reality, most of our planning activity is for the spring. We are trying to finalize the line-up of course offerings, making sure that we have faculty and instructors to teach those courses, finding rooms of the right size with the right equipment (why didn't the English department specify more periodic tables in the classrooms in Kimpel Hall? WHY?) and generally setting everything in place so that when registration starts in a few short months that nothing blows up. And we are working on some course planning for fall of 2017 already. In the same fashion, the faculty just considered the first in a wave of catalog changes needed to bring our program in line with change to the new American Chemical Society degree guidelines; changes that won't be seen by students for a least a year and the beginning of a process of revision that will probably take another year or two to complete.

In a similar fashion, the University is engaged in planning its course of action under the new Chancellor. But the changes won't be complete for many years, any more than either the University or the Department have finished the changes linked to the rapid growth of a few years back. Our department is big. Whether you measure in teaching load (about 3.8% of the University total), research funding (about 5.5% of the University total), physical footprint (three buildings with nearly 200,000 square feet), we are a large part of the University. It takes a lot more time to turn an oil tanker than a speed boat, so planning far in advance is needed. We have been around for nearly 150 years now. We aren't looking quite that far ahead of where we are now, but we are always thinking about the future and how we can make it better for us, the University, and our students.

A lot of really smart people get this newsletter. We'd love to hear what you think about the long view and where we should be. What should we be thinking about for the future? What are the hot new research areas to hire faculty in? What changes in courses will help our students in their careers? What can we do now to prepare for external change and to make positive internal change happen? And how can we get the English department to put up more periodic tables in Kimpel Hall?

Alumni Updates

After seeing the archive photo of Tom Hoering's original home-built mass spectrometer in the February 2016 issue of The Mole, **Les Butler** wrote in to say that his father probably used that machine to complete his research. **Robert Butler** received his MS in 1955, which puts him in the same era as the spectrometer. Robert's major professor, according to his thesis, was Tom Hoering. Also on his committee were Arthur Fry, Edward Amis, and Robert F. Kruh. Les said that he also remembers Dr. Fry very well. He was a pretty good student, receiving his only "B" in Dr. Fry's organic analysis course, due to not being able to figure out how to combine IR, NMR, MS, etc. to predict an organic structure. Even so, Les went on to receive his BS from the UA in 1977, and his PhD in 1981 from the University of Illinois. He is currently a professor of inorganic and materials science at Louisiana State University.

John W. Hill (Ph.D. 1961) is a U of A graduate in physical organic chemistry under the late Dr. Arthur Fry, whom he called a great teacher and mentor. He went on to say, "I had a really good career teaching at the University of Wisconsin-River Falls, but I have now been retired from teaching for 21 years. I have continued to work as a textbook author. I have authored and/or co-authored several texts. The fourteenth edition of Chemistry for Changing Times (with several others) came out in January of this year. The first edition came out in 1972, and the revisions for new editions have taken much of my working life for more than four decades." John lives in River Falls, Wisconsin.

As always, we are interested in what our alumni are up to. Please share any news and updates with us. Or, if you prefer to share memories of your time here, we'd love to have that as well.

Discovery Hall Project at University of Arkansas Opens Doors for Students, Faculty

By Jessica Burdg, Science Journalist
Tuesday, June 7, 2016 - In Labconco News

Nestled in the bustling community of Fayetteville is the University of Arkansas, an educational institution home to almost 27,000 students and countless other faculty and academic leaders.

Fayetteville was voted one of America's most beautiful cities in 2012, and—with the help of an ongoing laboratory remodel project at the U of A—is now home to yet another building of which it can be proud.

Discovery Hall, a multi-level, multidisciplinary space dedicated to chemistry teaching labs and bio-anthropology and archaeology, has been undergoing renovations for some time and is slated for completion in January 2017.

Project leaders adopted an extended timeline for Discovery Hall for good reason: the facility has been open for classes throughout its renovation—an accommodation necessity for the seventh fastest growing university in the nation. Since the project began around seven years ago, the university has experienced a 150 percent increase in enrollment.

The transition of Discovery Hall from a dated building to a modern teaching and learning facility has progressed along with this growth.

"This 1960s building will now be a 2017 building inside and out, ready to serve our students another 50-plus years," Mike Johnson, Associate Vice Chancellor for Facilities, said. "We still spent less than what a new facility might have cost by likely 35-45 percent, and we have a modern teaching facility without losing any real class time throughout the process."

New Hoods, New Capabilities

Fume hoods are essential in chemistry teaching labs, but not all fume hoods are created equally. Discovery Hall designers knew that as they looked to replace or add the total of 76 fume hoods required in the 49,800-square foot space.

Many of the 76 are Protector XStream Hoods, high performance hoods that blend efficiency, safety and functionality. Operating a 6-foot Protector XStream Hood at 60 fpm face velocity with the sash fully open, for example, requires only 690 CFM—an impressively low yield that results in significant energy and budgetary savings over time.

"The design team specified Labconco's XStream Hoods because they were proven low flow hoods that had been used on another project out at the Incubator Campus (Research & Technology Park), and they were advised the U of A wanted to standardize their hoods for operations and maintenance purposes," James Milner, Facilities Management Construction Coordinator for the project, said.

Replacing and adding fume hoods—and entire lab spaces, to that end—is just one element of the Discovery Hall project. To reach the overall goal of producing a safer, more useful space, many additional changes have been made.

For example, fire and smoke alarms have been replaced, electrical primary and secondary services have been modernized to meet current electrical code and asbestos has been abated from the building.

Substantial upgrades in air handling have also been made, including the replacement of makeup air systems, fan coil units, exhaust and control systems. In addition, fixed benches will soon be added along Discovery Hall's corridors to prevent students from extending their legs into the walkway, causing obstructions.

The new labs and additional hoods have greatly increased the student capacity in the building—but Discovery Hall doesn't just have more labs, it has better labs. Worn, stained casework has been replaced with state of the art systems that include epoxy surfaces. All instructional spaces feature AV systems to promote collaborative learning.

All of the chemistry and biology lab and prep spaces now have compliant emergency eyewash and shower stations, and the number of data outlets has more than doubled since construction began.

Building Wi-Fi has been installed along with whiteboards where archaic chalkboards used to be. The insulation, finishings, roof, windows—you name the face-lift, and Discovery Hall has had it done, all while allowing academic classes to continue as scheduled.

"If we hadn't renovated this building, lots of people couldn't take chemistry because we just didn't have the space to teach them," Wesley Stites, Chair of the Department of Chemistry and Biochemistry, said. "At the worst point, we were running labs from 7:30 am until 10:30 at night and then more on the weekends. Since we've added labs, it's gotten back to normal and brought accessibility back to the program."

ACS Certified Degrees Awarded for 2016

The American Chemical Society (ACS) promotes excellence in chemistry education for undergraduate students through approval of baccalaureate chemistry programs. ACS-approved programs offer a broad-based and rigorous chemistry education that gives students intellectual, experimental, and communication skills to become effective scientific professionals.

ACS authorizes the chair of ACS-approved programs to certify graduating students. Graduates who attain a certified degree must often complete requirements that exceed those of the degree-granting institution. A certified degree signifies that a student has completed an integrated, rigorous program which includes introductory and foundational course work in chemistry and in-depth course work in chemistry or chemistry-related fields. The certified degree also emphasizes laboratory experience and the development of professional skills needed to be an effective chemist. Certification gives a student an identity as a chemist and helps in the transition from undergraduate studies to professional studies or employment.

ACS approval publicly recognizes the excellent chemistry education opportunities provided by an institution to its students. It also provides standards for a chemistry curriculum based on broad community expectations that are useful for a department when designing its curriculum or acquiring resources.

The department is pleased to announce the three 2016 recipients of ACS Certified degrees. They are **Cody Marbut**, **Craig McLean**, and **Margaret Tinsely**. Congratulations!

Undergraduate Summer Research

The **Colin Heyes** lab hosted a 2-week NSF-funded summer workshop (part of Heyes' NSF CAREER award) from May 22nd - June 3rd with 12 students from Philander Smith University (PSU), Arkansas Baptist College (ABC), Arkansas Tech University (ATU), and Southeastern State University, OK (SESU).

Back row, L-R: Jeremiah Smith (ABC), Peter Joseph (PSU), Shane Goff (SESU), Payton Whitehead (SESU), Nicholas Laroe (ATU), Austin Nichols (SESU), Colin Heyes (UAF), Christopher Taylor (PSU).

Front row, L-R: Jade deArmond (ATU), Amy Kennedy (SESU), Tiffany Withrow (ATU), Melicia Robinson (ABC), Sean Brandon (PSU).

Graduate Students Defend

Bea Kachel

Yinling Zhang

Jeremy Durchman

Six graduate students have defended their research this summer.

Wibke Beatrice Kachel - Applications of the GST-affinity Tag in the Purification and Characterization of Proteins. June 3, 2016. Mentor - Suresh Kumar Thallapuranam

Yinling Zhang (MS) - Two-electron Quenching of Dinuclear Ruthenium(II) Complexes. July 1, 2016. Mentor - Bill Durham

Jeremy Durchman - Mechanism of Rapid Electron Transfer Reactions involving Cytocrome bc_1, Cytochrome c, and Cytochrome Oxidase. July 13, 2016. Mentor - Francis Millett

Elizabeth Spahn - The Large Scale Synthesis and Asymetric Hydrosilylation of CuIPhEt, a C2-Symmetric N-heterocyclic Carbene. July 20, 2016. Mentor - Matthias McIntosh

Chris Rupar - An Investigation of the Interaction of Dimeric Ruthenium Complexes with Cytochrome b_5. July 21, 2016. Mentors - Francis Millett / Bill Durham

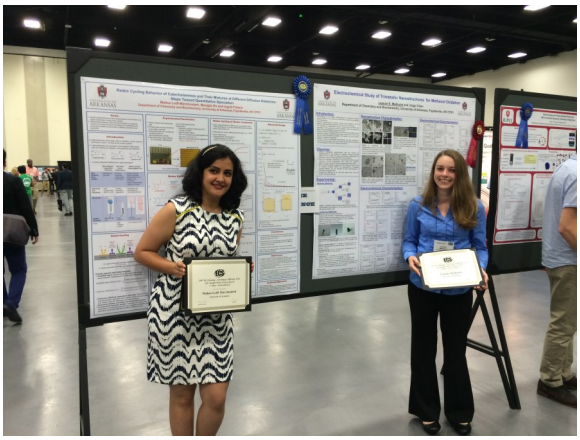
Brian Walker - Studies in the Asymmetric Synthesis of the C21-C34 Fragment of the Natural Product, Antascomicin B. July 22, 2016. Mentor - Matthias McIntosh

Liz Spahn

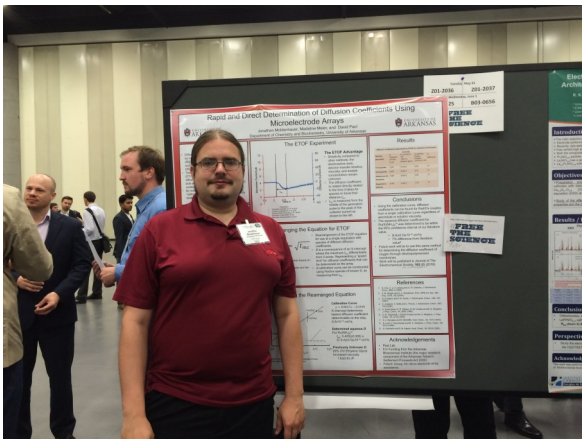
Chris Rupar

Brian Walker

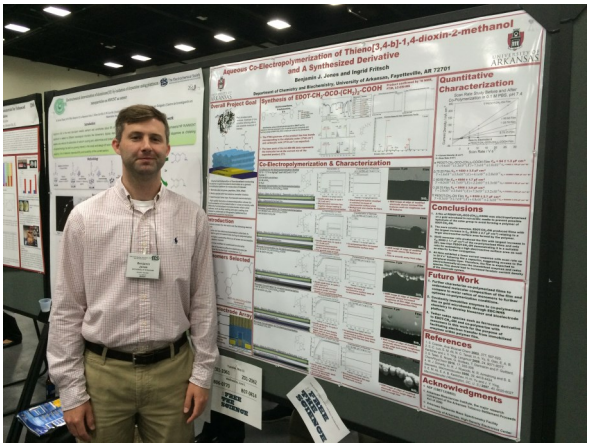
Electrochemistry Society Meeting Pictures



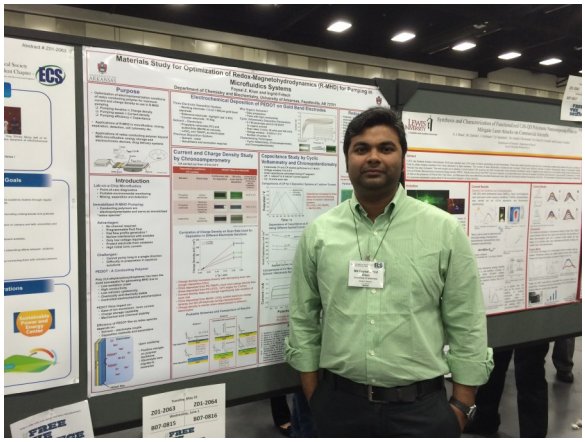
Mahsa Lotfi-Marchoubeh and Leanne Mathurin



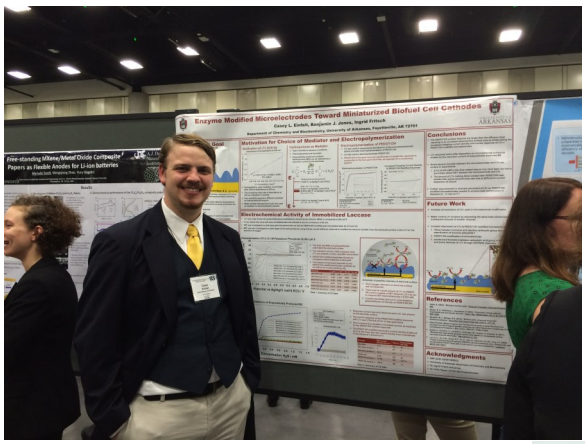
Jonathan Moldenhauer



Ben Jones



Foysal Khan



Above L: Casey Einfalt

Above R: Group Dinner at Bandar Restaurant in the Gaslamp District of San Diego. L-R around the table: Jazlynn Wisener, Aaron Nicholson, Jon Moldenhauer, Mahsa Lotfi-Marchoubeh, Zeb Schichtl, Leanne Mathurin, Ben Jones, Casey Einfalt, Professor Ingrid Fritsch, Foysal Khan, and James Lowe.

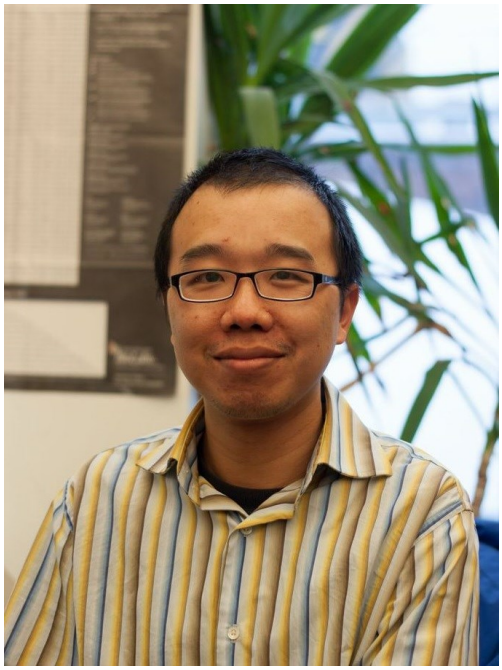
Free the Science 5K Running Group, which promotes open access for not only Electrochemical Society journals, but for all scientific literature.

Sabine Borgmann Remembered *by Charles Wilkins*

Sabine Borgmann, former Post-doc for Charles Wilkins

I was saddened to learn of the sudden and unexpected death of Dr. Sabine Borgmann from a heart failure on June 23, 2016 at the age of 39. Following the completion of her Ph.D. at the Ruhr-Universität Bochum in 2004 she arrived at the University of Arkansas in 2005 to pursue postdoctoral studies with me. Her husband Christian accompanied her to Fayetteville. As a colleague, she was not only ambitious, hard-working, and productive but was a pleasure to work with because of her warm and outgoing personality. Once she arrived, it was not long before Sabine became an active member of the Chemistry and Biochemistry Department as well as the wider Fayetteville community. Sabine and Christian soon had many friends and a good social life in addition to Sabine's numerous research accomplishments. Following her return to Germany at the end of her postdoctoral studies, Sabine accepted an appointment at the Technical University of Dortmund and subsequently returned to a scientific administrative position at the Ruhr-Universität Bochum. Sabine and Christian celebrated their 10th year wedding anniversary just last year. Because of their fond memories of Fayetteville, Sabine and Christian were planning another visit to Fayetteville to see their many friends next year in 2017 to celebrate the 10th anniversary of their first stay in Arkansas. We will all miss her greatly and remember her dearly.

Chenguang Fan Joins Biochemistry Faculty



Chenguang Fan was born in the city of Nanjing in China. He got his bachelor degree of biological pharmacy from Nanjing University, working in the field of Chinese herbal medicine. In 2004, Dr. Fan went to Iowa State University at Ames, Iowa where he worked under the guidance of Professor Thomas Bobik for his PhD degree. He focused on vitamin B_{12} biosynthesis and metabolism in both bacteria and human. Dr. Fan graduated with the Excellent Graduate Research Award. Because of family reasons, he stayed in Iowa State University as a postdoc, studying a pathogenesis-related organelle in *Salmonella*, the most widely distributed foodborne bacteria. In 2012, Dr. Fan joined the group of a member of the National Academy of Science, Professor Dieter Söll at Yale University, where he has made great contributions to the field of genetic code expansion, a state-of-art technique in synthetic biology utilizing unnatural amino acid to solve a wide range of biological problems. Dr. Fan has a number of publications in leading scientific journals including *Nature Biotechnology*, *Angewandte Chemie*, and *Proceedings of the National Academy of Sciences*.

The research interest of Dr. Fan is to apply the genetic code expansion technique to the pathogen studies, including site-specific labeling toxin proteins, mapping interaction networks of toxin proteins with human targets, and exploring the functions of post-translation modifications in bacterial physiology and pathogenesis. Such unique combination of pathogen studies and synthetic biology made him succeed in getting an external research grant from National Institute of Health which he brings to the University of Arkansas as an additional support to establish his promising research program.

Dr. Fan met his wife at Iowa State University, and now they have a 4-year-old boy. In spare time, Dr. Fan likes playing soccer and photography.

When the fall semester begins, his office will be CHEM 115. He will be teaching Biochemistry I.

Joshua Sakon Attends Cooking Workshop

The NSF-sponsored Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS) in Food Chemistry, was held in Dubuque, IA from June 26th to July 1st. The workshop covered topics ranging from analyses of flavors, mixtures, nutrition, cooking methods and food chemical reactions. Concepts learned in classes were then tested at the kitchen activities center. [During this portion of the hands-on lab experimentation, I reflected back on the many occasions I told my students to read the assigned experiments in the manual before coming to the laboratory. When I didn't read recipes before starting the dish, I suffered the consequences. I should practice what I preach.]

Food pairing is a scientific method to identify which foods and drinks go well together and how one food may affect the taste of other. For example, artichokes contain a couple of compounds that cause what you subsequently eat to taste sweeter. Two experiments were exceptionally memorable. After licking miracle berry extract, sour foods tasted sweeter. For example, chewing lemon pieces yielded a taste of lemonade. Only weak acids can have this effect. On the other hand, an herb, Gymnema sylvestre, impaired or cancelled sweet sensations. The herb extract made table sugar taste like sand. Introducing these compound pairings to a biochemistry class would help illustrate how an antagonist and pH dependent structural changes occur.

Unlike chimpanzees that spend most of their day chewing and eating, humans usually don't allocate time to chew all day long. Instead, they get needed nutrition by "outsourcing" in the form of cooking. Cooking makes it easier for foods to be consumed and for our digestive system to process food into nutrition. In fact, cooking may have had a profound impact in the physiological evolution of human beings. During the past several decades, we have been systematically deskilled and have outsourced cooking to the food industry, which assumed the responsibility to provide what we desired. The consequences are profound. For example, the overwhelming majority in the USA now prefers flavored corn syrup to the xylem sap of maple tree (real maple syrup). It is something to think about. Another take-away message from the nutrition section of the workshop was the imperative need to avoid artificial trans fatty acids and swap high glycemic index (GI) foods for low GI foods. We haven't evolved far enough physiologically to handle either transfats or high glycemic foods.

Aided by professional chefs, eight of us (group 1), prepared an eight-course French meal consisting of Kir Royale, oysters with foaming Mornay sauce, salad nicoise with lemon vinaigrette, grilled asparagus with sauce Choron, pommes Lorette, buoillabaisse, coq au vin, and classic crème brulee. An eight-course German cuisine was prepared on the second evening by group 2. Pretzels were dipped briefly in a 0.5 M NaOH solution before they were baked in order to achieve a deep brown crust. The third evening was spent at a brewery to pair different styles of beer with food. For the last evening meal, group 3 prepared Moroccan cuisine. From this, braised lamb shanks with dates was a dish that I would love to replicate. The workshop is of interest to faculty members who wish to make chemistry palatable. The workshop will certainly enhance future Molecular Gastronomy courses offered at the U of A.

Editor's note: Wonder what he will bring for the December Departmental Potluck??

Cordes Teaching Award Recipients

L to R: Jonathan Moldenhauer, Matt Moudy, Dustin Baucom

Congratulations to **Dustin Baucom**, **Jonathan Moldenhauer**, and **Matthew Moudy** who will each receive $1000 as the recipients of the 2015-2016 Wally Cordes Teaching Award. This award was established in 1984 by A. Wallace and Doris Cordes to recognize teaching assistants who excel in the classroom. Dr. Cordes, otherwise known as Wally, retired in 2003 after 43 years of teaching, research, and service. He helped found a center at the University of Arkansas to improve teaching effectiveness which today bears his name – the Wally Cordes Teaching and Faculty Support Center. Dustin's advisor is **Colin Heyes**, Jonathan's is **David Paul**, and Matt's is **Wesley Stites**.

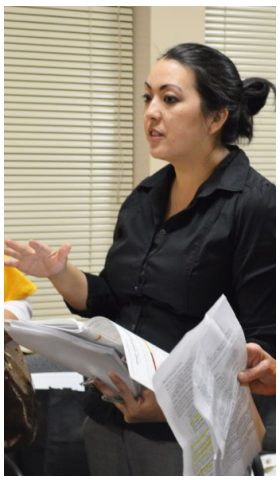
Milestones

Graduate student **Dharma Nannapaneni** and his wife Tulasi were recently blessed the arrival of a baby boy, Anav Nannapaneni. Anav arrived June 6, weighing in at 6.69 pounds and was19 inches long.

Dharma is a student in the McIntosh lab, and entered the program in the fall of 2011. He received his Bachelors degree in 2006 from Nagarjuna University and his Masters Degree in 2008 from Annamalai University, both in India. Tulasi is currently pursuing her master's degree in operation management, here at the U of A.

At left is **Brian Walker**'s official family portrait, recognizing his completion of the PhD. With him is his wife **Juliette Rivero-Castro** (PhD 13) and his children, Landon and Kasia. Brian's next step will be doing a postdoc with Dr. Darin Jones at UALR in medicinal chemistry.

Susan Grisham Banerjee (PhD 10) was the Chair, Co-Curriculum, and Fundraising Chair for the AAUW North Hills Pittsburgh Branch's first Tech Savvy on May 14, 2016. Tech Savvy is a one day Science, Technology, Engineering and Math (STEM) career conference designed to develop the interest of 6th-9th grade girls in STEM fields and provide information to their parents and educational professionals on STEM educational opportunities. This conference, on of 23 nationwide AAUW Tech Savvy sites, hosted 76 girls and 32 parents. Alcoa foundation and La Roche College sponsored the workshop. Collaborators were Carnegie Mellon University's Girls of Steel Robotics, Junior Achievement, Trusst Lingerie, Imagine Careers, Wells Fargo, FASE, Penn State-New Kensington, and La Roche College. Susan is also president of the AAUW branch.



McLean Awarded Rowden Scholarship

L-R: Dr. Christa Hestekin (faculty advisor), Craig McLean, Marissa Reynolds (Master Alchemist of Alpha Sigma Chapter), and Allie Elliott (Scholarship Chairman of Alpha Sigma Chapter)

Craig McLean has been chosen by the members of the Alpha Sigma Chapter of Alpha Chi Sigma to be the 2016 recipient of the Dr. Robert W. Rowden Scholarship in the amount of $1000. McLean is a senior at the University of Arkansas and expects to graduate with a dual Bachelor's degree in Chemistry and Mathematics this spring. During his time at the University of Arkansas, McLean has worked under the advisement of Dr. **Paul Adams** as well as participating in summer research opportunities at the Oak Ridge Institute for Science and Education, Stanford, and Woods Hole Oceanographic Institution. In the fall, McLean will begin work in the doctorate program of chemical oceanography through the MIT-WHOI joint program. With this work, he hopes to facilitate public health treatment systems and to mitigate the effects of urban sprawl in Latin American nations.

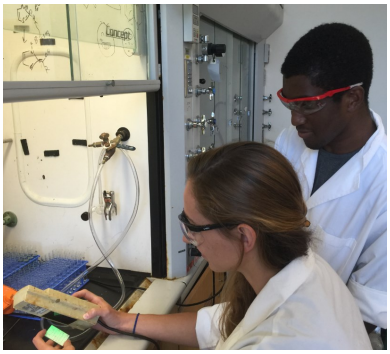
The Rowden Scholarship is awarded in honor of Dr. Robert W. Rowden who was an Alumnus of the University of Arkansas Chemical engineering program, ROTC program, and the Alpha Sigma Chapter of Alpha Chi Sigma. Recipients are chosen based on their judgement of the potential of the candidate to make a significant contribution to the chemical science and of how the candidate exemplifies the characteristics of honor, service, and devotion to God, country, family, and friends.

Alpha Chi Sigma is the nation's only professional chemistry fraternity and was established in 1902. It is a co-ed fraternity of over 70,000 members who are brought together in their common chemical interests. The Alpha Sigma Chapter at the University of Arkansas has over 30 active members and engages in many social and community activities. Their science outreach program is active with elementary age students at afterschool science clubs and at workshops at the Fayetteville Public Library. They engage with older students by volunteering at various science fairs and by assisting Scouts in their merit badge achievements.

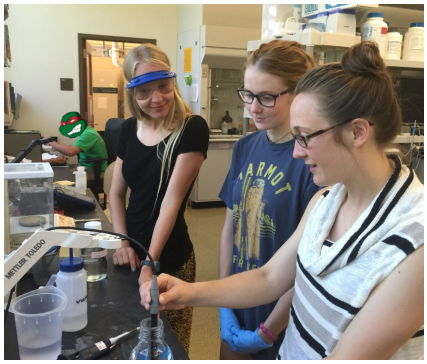
~ Marissa Reynolds, Master Alchemist

Expanding Undergraduate Research in the Department of Chemistry and Biochemistry

The number of Honors students majoring in chemistry and biochemistry have increased substantially in the last few years. As a result, the number of students seeking to participate in undergraduate research has also increased. The Department of Chemistry and Biochemistry is involved in a pilot study supported by the Honors College and Provost Ashok Saxena to increase the department's undergraduate research capacity. Graduate students Jacklyn Kubik in the McIntosh group and Julie Davis in the Kumar group have been awarded research assistantships for 2 years so that they can each mentor multiple undergraduate researchers simultaneously.



Left: Graduate student **Jacklyn Kubik** and undergraduate researcher **Oree Meeks** discuss how to purify a new organic compound they have prepared.



Right: Graduate student **Julie Davis** shows undergraduate researchers **Vaness Weilding** and **Abby Pickhardt** how to measure and adjust the pH of a buffer solution used in affinity chromatography.

This is the result of Dr. Kumar's lab group of undergrads, grad students, and postdocs being asked to take a nice group picture. Front Row (all are L-R): Pooja Lukhi, Julie Eberle, Madison Cole, Mercede Furr. 2nd Row: Musaab Al-Ameer, Srinivas Jayanthi, Rory Henderson, Dr. Kumar, Ravi Kumar Gundampati. 3rd Row: Duaa Almansaf, Bea Kachel, Jacqueline Morris, Ellen Fields, Roshni Patel, Kylie Cleavenger, Elizabeth O'Daniel, Isabelle Williams, Hether Bogy. 4th Row: Will Pohlman, Tucker Rudisill, Josh Anderson, Adam Burroughs. Dr. Kumar looks tired, don't you think?

THE MOLE STREET JOURNAL IS AN INTERNAL PUBLICATION OF THE DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY
CHAIR, WESLEY STITES
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Safety Tip:

By Bill Durham

Think about what you are doing. Accidents happen when you don't think about potential hazards. Turning the crank is not the best science.

Department of Chemistry and Biochemistry

Calendar of Events

August

08 National Sneak Some Zucchini Onto Your Neighbor's Porch Day
17 First Year Graduate Student Orientation
22 Classes begin
26 Last day to register or add a full semester course
29 Seminar: Dr. James C. Gumbart, Georgia Tech 3:30 CHEM 144

September

05 Labor Day holiday (office is closed, no classes)
10 National Swap Ideas Day
12 Seminar: Dr. Xuefei Huang, Michigan State University 3:30 CHEM 144
19 Seminar: Dr. Victor Salvador Batista, Yale University 3:30 CHEM 144
22 Autumnal Equinox Day - First day of fall
26 Seminar: Dr. David Vicic, Lehigh University 3:30 CHEM 144

CUMES start in September - no dates have yet been announced

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.

Library Hours

Intersession and Interim Hours: August 6 - August 21

Saturday and Sunday	CLOSED
Monday - Friday	8:00 am - 5:00 pm

Fall Hours: August 21 - December 17

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

Exceptions to Fall Hours:

Monday, Sept 5, Labor Day	CLOSED
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

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.

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.

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!

Joke Time

- with Julie

"Why did the bear dissolve in water?

… because it was POLAR, obviously!"

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