

Special points of interest:

- All departmental seminars will now begin at 3:15p.m., not 3:30p.m. The location remains CHEM 144.
- Lothar Schafer, retired distinguished professor, has published a new book "Infinite Potential" published by Deepak Chopra Books, an imprint of the Crown Publishing Group, a division of Random House, Inc., New York 2013. Foreword by Deepak Chopra.

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Adams Honored for Excellence in STEM Research and Mentoring

National Organization recognizes chemist with national award

Growing up in southeastern Louisiana, Paul Adams never considered becoming a professional researcher. He planned to become a doctor.

"I did go to medical school for a year, but that's when I thought about research as a career," said Adams, an associate professor of chemistry and biochemistry at the University of Arkansas.

Adams stuck with academia — he is in his seventh year on the faculty in the J. William Fulbright College of Arts and Sciences — and now he has been recognized by a national organization for his work.

Adams has been selected for the 2013 Presidential Award for Excellence in STEM Research and Mentoring by the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE). Adams will accept his award on Oct. 4 at the 40th National NOBCChE Conference in Indianapolis.



"Dr. Adams is great because he is so focused and also caring. Because of his solid drive and clarity, we learn so much working in his lab," Padma Manavazhahan, junior and Bodenhamer Fellow in Fulbright College.

"In getting a Ph.D., and running a research laboratory, I knew there were very few people in my field who looked like me, because minorities have been traditionally underrepresented in STEM disciplines," Adams said. "Others have stressed to me that I can be seen as a role model. But I've never tried to relish in the fact that I am an African-American scientist. I've tried to relish in the fact that I am a scientist who happens to be African-American."

The award honors those who achieve excellence in scientific research and maintain a steadfast commitment to developing future scientific leaders in the "STEM" fields of science, technology, engineering and math.

"To have my peers at the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers recognize me in this manner — not only doing good science but also considering me an example for what students coming up behind me are capable of achieving — it's a surreal feeling," Adams said.

Adams' research focuses on Ras proteins, which have been identified in nearly one-third of cancer cell types. He believes that these proteins have unique structural aspects, which, in part, may play a role in causing cells to continue growing, a behavior that is a hallmark of cancer cells. By creating chemical differences in different parts of the protein, Adams and his research team hope to learn more about how the proteins work and affect the cells. That information can then be used to help design drugs that target the specific protein and stop the cancerous behavior. "We've published two papers directly related to the research and we had a collaboration that resulted in two more papers," said Adams, who since coming to the university in 2007 has received more than \$1.45 million in funding from the National Science Foundation, National Institutes of Health and the Arkansas Biosciences Institute. Adams' research lab at the University of Arkansas includes one postdoctoral scientist, two graduate students and 10 undergraduates.

Following his undergraduate studies in biochemistry at Louisiana State University, Adams earned a doctorate in biophysical chemistry from Case Western Reserve University and held a National Science Foundation Fellowship from 2003-2006 as a postdoctoral researcher at the department of molecular medicine at Cornell University.

By Chris Branam, research communications writer/editor, University Relations
Photo by Russell Cothren

Faculty News

Presentations

Heyes, C., Radiative and Nonradiative Lifetime Engineering of Quantum Dots, ACS 246th National Meeting in Indianapolis, IN: invited presentation (September 8-12, 2013).

Heyes, C., Structural and Dynamic Heterogeneity of Nanomaterials and Biomolecules Probed by Ensemble and Single Molecule Spectroscopy at University of Kansas in Lawrence, KS: invited presentation (October 4, 2013).

Janowski, T., Natural Correlation Orbitals in Local Laplace Transformed Triples (T) Correction, The VIIIth Congress of the International Society of Theoretical Chemical Physics in Budapest, Hungary: poster presentation (August 25-31, 2013).

Pulay, P., Ultrafast Quantum/Molecular Mechanics Monte Carlo Simulations, The VIIIth Congress of The International Society of Theoretical Chemical Physics in Budapest, Hungary: presentation (August 25-31, 2013).

Ponnapakkam, T.; Katikaneni, R.; Stratford, R.; **Sakon, J.**; and Gensure, R., Subcutaneous and Intravenous Single Dose Pharmacokinetics of PTH(1-34) and PTH-CBD, a Long-Acting Parathyroid Hormone Analog, in Sprague Dawley Rats, American Society for Bone and Mineral Research Annual Meeting in Baltimore, MD: presentation (October 8, 2013). Josh is unable to attend, but will be there in spirit.

Gensure, R.; Katikaneni, R.; **Sakon, J.**; and Ponnapakkam, T., PTH-CBD Increases Bone Mineral Density by Causing Greater Increases in Bone Formation than Bone Removal in OVX Rats, American Society for Bone and Mineral Research Annual Meeting, Baltimore, MD: presentation (October 8, 2013). Josh is unable to attend, but will be there in spirit.

Wilkins, C., Hyphenated Analysis Methods: Past, Present, Future, ACS 246th National Meeting in Indianapolis, IN: invited paper presentation (September 10, 2013). This presentation was at the Analytical Chemistry Symposium on the occasion of Dr. Wilkins receiving the American Chemical Society, Analytical Chemistry Division Award in Chemical Instrumentation, sponsored by Dow Chemical Corporation.

Publications

Piper, K., and **Tian Z.R.**, Preparation of New Versatile and Implantable Titanate Nanofiber-Bioscaffolds via Efficient Cation Exchanges. *Inquiry Undergraduate Research Journal*, 5, 87–96, 2013.

Zhou, H.; Deng, H.; Ghetmiri, S.A.; Abu-Safe, H.H.; Yu, S.; Yang, X.; and **Tian, Z.R.**, Optimizing Height and Packing-Density of Oriented One-Dimensional Photocatalysts for Efficient Water-Photoelectrolysis. *Journal of Physical Chemistry C* 2013, DOI:10.1021/jp407317k, in press.

Kolawole Ayinuola Awarded Phi Kappa Phi Love of Learning Award

Kolawole Ayinuola, a doctoral candidate in the chemistry and biochemistry program, recently was awarded a Love of Learning Award worth \$500 by the Honor Society of Phi Kappa Phi—the nation's oldest and most selective collegiate honor society for all academic disciplines. He is one of 147 recipients nationwide to receive the award.



Ayinuola, who is from Lagos, Nigeria, was initiated into the society in 2011 at University of Arkansas. He plans to apply funds from the award toward obtaining Project Management Certification.

Founded in 1897, Phi Kappa Phi is the nation's oldest and most selective collegiate honor society for all academic disciplines. Phi Kappa Phi inducts annually approximately 32,000 students, faculty, professional staff and alumni. The Society has chapters on more than 300 select colleges and universities in North America and the Philippines. Membership is by invitation only to the top 10 percent of seniors and graduate students and 7.5 percent of juniors. Faculty, professional staff and alumni who have achieved scholarly distinction also qualify.

Tomasz Janowski Places 1st in Poster Competition

In this poster a new computational approach to the calculation of electron correlation energies has been presented. The new method enables chemists to perform calculations in large molecular systems, in principle as large as having hundreds of atoms, and to obtain precise reaction enthalpies, interaction energies, bond strengths and other thermochemical properties. The average deviation from the experimental data is within a tenth of kcal/mol for most cases. The same accuracy is maintained for weakly interacting systems as well, e.g. hydrocarbons.

The novelty in this development is that by using an appropriate mathematical transformation, a molecule can be divided into a set of smaller, but coupled subsystems, and a separate calculation can be performed for each subsystem. This results in significant savings in the total computational cost. It has been demonstrated that it is possible to recover more than 99.9% of the total correlation energy while reducing the total computation time by orders of magnitude, with greater savings for larger molecules.

The VIIIth Congress of The International Society of Theoretical Chemical Physics

Budapest, Hungary * 25-31 August 2013

Springer Prize (1st prize):

Tomasz Janowski



Keaton Piper Featured in Undergraduate Research Journal



Inquiry: The University of Arkansas Undergraduate Research Journal was developed by the Teaching Academy of the University of Arkansas as a forum for sharing the research and creative endeavors of undergraduate students. The journal is supported financially and conceptually by the offices of the provost and the vice provost for research and economic development. The September 2013 issue is now available online.

Volume 15 of *Inquiry* features the unique contributions of five undergraduate student authors and their faculty mentors including the department of chemistry and biochemistry's own, **Keaton Piper**.

Keaton developed and examined whether low-cost titanate nanofiber-bioscaffolds compensate for the longstanding problem of implantable biomaterial's poor stability and versatility.

Lorraine Brewer Educates About Large Classes

Lorraine Brewer led one of the breakout sessions at the annual Baum Teaching Workshop in August. The title was "Engaging, Educating, and Enjoying Students in Large Classes". We had a lively discussion of ways to build



the classroom so students feel more comfortable taking the risks needed to learn well. We also shared ideas for maintaining engagement, challenging and encouraging our students, and enjoying our students while creating a more effective learning environment.

Exploring Japan



Josh Sakon hosted an Exploring Japan event Sept. 24. Six students from diverse backgrounds who recently returned from Japan presented their experiences.

Creating shared experiences outside of one's normal group he felt was important and meaningful. Plus, it was a whole lot of fun.



THE MOLE STREET JOURNAL IS AN
INTERNAL PUBLICATION OF THE
CHAIR, DAN DAVIS.
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Safety Tip: by Bill Durham

Remember if you have a spill or fire you must decide quickly that you can address the situation without endangering your health. Otherwise, you must leave the area and to the best of your ability tell everyone in danger to do likewise.

Department
of
Chemistry
and
Biochemistry



Excellence in the Central Science

New Poster Printing Process

You now can make a reservation and provide payment information to print at poster at the following link: chemistry.uark.edu/7524.php

Annual Department Picnic

Thursday, October 3, 2013

5 P.M. - 9:00 P.M.

The Gardens



(located off Razorback Rd.—the closest parking lost is on Leroy Pond Dr.)

Families Welcome! Lawn Games Encouraged!

Burgers, Hotdogs, Buns, Condiments, Soda, and Water provided. Please bring Side Dishes and Desserts.

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

OCTOBER

- 03** Annual Department Picnic, 5-9:00p.m., The Gardens
- 07** Department Seminar, Mark Biscoe, City College of New York, 3:15p.m., CHEM 144
- 11** CUME exam, 5:-6:00 p.m., CHEM 144
- 14** Department Seminar, Theresa Reineke, Minnesota, 3:15p.m., CHEM 144
- 16-19** ACS Meeting (MWRM), Springfield MO
- 17-18** INBRE Conference
- 21-22** Fall Break for Students

ACS Student Affiliate

The ACS Student Affiliate usually meets every other Wednesday at 5:00p.m. in the Chemistry building. The best way to confirm meeting dates/times and room location is to contact an officer and request to be added to the mailing list.

2013-2014 Officers:

- President, Vasupradha Suresh Kumar, vsureshk@email.uark.edu
- Co-Vice President, Megan Wood, mkw002@email.uark.edu
- Co-Vice President, Pilar Bare, pbare@email.uark.edu
- Secretary, Chase Wingfield, chwingfi@email.uark.edu
- Treasurer, Corinne Songer, csonger@email.uark.edu



Save the Date!

The 2013 INBRE conference will be held October 18-19 in Fayetteville, AR. Please be sure to register for the conference! Visit <http://chemistry.uark.edu/INBRE/3642.htm> for all conference information.

Library Hours

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

Fall Semester Hours: August 26—December 19

Monday—Thursday	8 a.m.-9 p.m.
Friday	8 a.m.-6 p.m.
Saturday—Sunday	Closed
LABOR DAY (Sept. 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>.

