

The Mole Street Journal

Department of Chemistry and Biochemistry

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Special points of interest:

- Paul Adams appears in regional publication
- David Hayes receives award
- Mya Norman awarded patent

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UA Professor Highlighted in African American Perspectives Magazine

Professor Paul Adams' research and achievements were highlighted in the summer issue of a regional publication. African American Perspectives of Northeast Arkansas is the premiere communication vehicle for African Americans in Northeast Arkansas and beyond. African American owned and operated, AAP is a professional, Christian enterprise committed to the highest ideals of service to the communities in which we live, serve, and lead. They are committed to uplifting and promoting the African American spirit by providing relevant information for the soul, body and mind. The magazine better connects African Americans with each other and the larger community by serving as a conduit for continuous dialogue, information sharing and the transfer of knowledge.

Dr. Adams' research involves understanding the mechanisms that lead to cancer, and the development of therapeutic strategies to tackle the disease. He is a protein biochemist and biophysicist who studies the biochemistry and structural biology of RAS (Rat Sarcoma) proteins. Adams and his team are learning about how these proteins work by engineering chemical differences in different parts of the protein. Ultimately, he hopes that the information coming from his laboratory will aid researchers in the future design of drugs that target this particular proteins.



David Hayes Receives Award from Alpha Chi Sigma



Instituted in 1992 in honor and memory of Dr. Ronald T. Pflaum, Alpha Theta 1953, the Ronald T. Pflaum Outstanding Chapter Advisor Award is presented at Conclave each biennium to a chapter advisor as recognition of his or her ongoing contributions to the success of a chapter and his or her continuing service to the interest of the Fraternity.

This award consists of an engraved plaque and an invitation to participate at Conclave. R. David Hayes was awarded this honor for 2012.

David earned his bachelor's degree in chemistry at the University of Arkansas in 1969 and his master's degree in chemistry at Murray State University in 1971. He was initiated in Alpha Sigma Chapter in 1966.

David spent 31 years with International Paper Company, serving in several supervisory positions. He retired from the company in 2006. He also has 15 years of experience as an instructor in three community

college systems.

David's work has been published in the *Journal of Chemical Education* and *School and Community* magazine, as well as 23 research and development papers and two training manuals. He also has one copyright for a qual road map exam.

For the past 5 years, David has served as laboratory coordinator in the department of Chemistry and Biochemistry at the University of Arkansas. He became chapter advisor of Alpha Sigma Chapter in May, 2008.

Faculty News

On the Go

The 26th Annual Symposium of the Protein Society was held in San Diego, CA, August 5-8, 2012. Presenting posters were **Paul Adams, Arshan Dehbozorgi, T.A. Jones, and J. Tran.**

Morris, Kyla, Mana, Padma, and Adams, Paul D. Preliminary Characterization of the Interaction between the Ras Protein, Rheb, with a Truncated Version of Tuberos Sclerosis Complex 2 (TSC2) and Potential Effects of Heparin Mimicking Biomolecules on this Protein Interaction.

Dehbozorgi, A., R. Kerr, and T.K.S. Kumar. Characterization of a Thermostable Quadruple Mutant of Human Fibroblast Growth Factor-1.

Jones, T.A., S. Jayanthi, and T.K.S. Kumar. Thermodynamic Characterization of a Destabilized

Mutant of the Human Acidic Fibroblast Growth Factor.

Tran, J., R. Henderson, and T.K.S. Kumar. Characterization of the Structure of the C-terminal Domain of Alb3.

Matthias McIntosh attended a meeting on undergraduate STEM education at the Cottrell Scholar conference at Research Corp. in Tucson, AZ, July 11-13. He also attended the Arkansas Commercialization Retreat at the Winthrop Rockefeller Conference Center on Petit Jean Mountain July 15-17.

Maity, S.; **Zheng, N.** Visible Light Mediated Oxidative C-N Bond Formation/Aromatization Cascade: A New Photocatalytic Entry to *N*-Arylindoles. Poster presented at GRC Heterocyclic Compounds, Salve Regina University, Newport, RI, June 24-29, 2012, and GRC Organic Reactions & Processes, Bryant University, Smithfield, RI, July 15-20, 2012.

Publications

Maity, S.; **Zheng, N.** A Photo Touch on Amines: New Synthetic Adventures of Nitrogen Radical Cations. Accepted for publication in *Synlett*. (this is a SYNFACTS article).

Maity, S.; **Zheng, N.** Visible Light Mediated Oxidative C-N Bond Formation/Aromatization Cascade: A New Photocatalytic Entry to *N*-Arylindoles. Accepted for publication in *Angew. Chem. Int. Ed.*

Mya Norman was awarded a patent on May 29, 2012 for an Electrochemical Pump. Please see article below.

Grant Awarded

Peter Pulay was awarded a grant from the National Science Foundation entitled "Accurate Atomistic Modeling of Solutions." The project period is from July 15, 2012 to June 30, 2015 and the total amount awarded was \$320,504.

Norman Awarded Patent

Dr. Mya Norman was awarded a patent on May 29, 2012 for her Electrochemical pump. Other inventors on the patent are Christine E. Evans, Forrest W. Payne, Carl A. Koval, and Richard D. Noble. The invention uses electrochemically-based methods in devices for producing fluid flow and/or changes in fluid pressure. In the invention, current passes through a divided electrochemical cell. Adjacent compartments of the cell are divided by an ionically conducting separator. Each compartment includes an electrode and an electrolyte solution or ionic liquid. The electrolyte solution(s) or ionic liquid(s) and the ionically conducting separator are selected to obtain the desired relationship between the current through the cell and the fluid flowrate and/or change in fluid pressure. "This is a result of my graduate work at Colorado University at Boulder, and the patent is licensed to SFC Fluidics of Fayetteville AR," says Norman. She holds two patents that are licensed to SFC, which are both part of the ePump product that SFC sells. The patent number is 8,187,441.



News from Fulbright IT



Teresa Waddell was promoted to Director of Technology July 1, 2012. Her new duties are to direct Fulbright IT Staff on technology related projects, technology classrooms, services, and initiatives as well as provide technical judgment and solutions for complex matters, oversee and advise on technology related purchases for the college, and to plan and coordinate functions in Fulbright IT for computer support. Additionally, she will work through committees, collaboration with other technical agents, and various resources throughout campus to better align and deliver services for Fulbright College and its members.

Student News

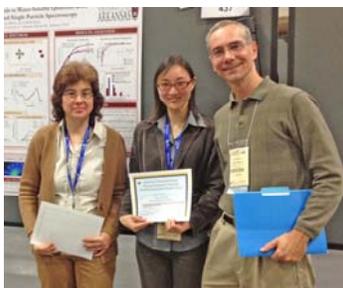


David Clay successfully defended his dissertation "Studies toward the Synthesis of Antascomicin B" on July 25, 2012. His advisor was **Dr. Matt McIntosh**.

David entered the Ph.D. program in the Spring of 2008 and held a Doctoral Academy Fellowship. He received his B.A. degree in Biology from Hendrix College. He is married to Jenna

Brie Conlon and they now reside in West Orange, NJ.

Pictured are from left to right: Professor Martina Havenith, **Hiroko Takeuchi**, and ACS program chair, Martin Gruebele at the Spring 2012 ACS national meeting in San Diego. Hiroko was a recipient of an award for her poster "Binding and exchange of thiol ligands (R-SH) to water-soluble quantum dots monitored by ensemble and single particle spectroscopy." Co-authors were Derrel Walters and Colin D. Heyes.



Grad School Fair Announced

The University of Arkansas Career Development Center will be hosting a Graduate School Fair on October 4, 2012. The University of Arkansas Graduate School Fair provides opportunities to explore programs, obtain school information, and speak directly with school representatives. Graduate programs attend fairs to increase student awareness about their program, the degrees they offer, and to identify prospective student applicants.

Graduate Schools are encouraged to register for the Graduate School Fair to meet and network with students as well as brand their organization/department on a campus with over 22,000 students representing more than 95 majors and 150 graduate degree programs. The registration deadline to attend this fair is September 26th.

Students are encouraged to attend the Graduate School Fair to identify graduate school opportunities, expand their network, and gather information about graduate schools.

Registration is required. To register, visit career.uark.edu For more information, contact Lori Magar at (479)575-2805.

Timothy Kum Beng received a Ruth Kirchstein National Research Service Award from the National Cancer Institute to fund his postdoctoral stay with Professor Richmond Sarpong at the University of California at Berkeley. This prestigious award is commonly known as an NIH individual postdoctoral fellowship.



Premedical Study Abroad

Pictured at right are the student participants of the Health Teams Abroad, study abroad in Sweden. Starting at the front left and going clockwise, the students are **Edouard Oudin** (Chem), Charles Lavender (undeclared), **Taylor Gohman** (Chem & Biol), **Hayden Dunn** (Chem), Peyton Baker (Biol & Eng), Claire Chessir (Biol & Psych), **Nathan Falls** (Chem), Katie Atkins (Biol Eng), Amy Fletcher (Biol & Psych), Graham Reinhard (Chem Eng), **Jessica Morales** (Chem), Stephanie Cone (Biomed Eng), Emily Shields (Biol Eng), Kiley Jones (Biol), Zach Tilley (Biol), **Colton Kordsmeier** (Chem & Biol), **Keaton Piper** (Chem). They are pictured in the 19th century Anatomical Theatre in the Museum Gustavianum of Uppsala Univ., Sweden. In the late 19th century, the autopsies of mostly prisoners were open to the public. **Neil Allison** was one of 4 faculty members participating in the experience.



THE MOLE STREET JOURNAL IS AN
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We're on the web!
Chemistry.uark.edu/4842.php
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Safety Tip: by Bill Durham

With summer wind-
ing down it is a
good idea to clean
up the waste and
dead samples gener-
ated during the
summer while you
still remember what
they are.


Department of Chemistry
and Biochemistry

Excellence in the Central Science

INBRE Program Complete

As part of the summer research program for undergraduates on campus, Dr. David Paul was host to four students participating in the program. There were 3 INBRE participants, Kai Carey, Harold Owiti, and Nicole Turnbridge. One additional participant was part of the Carver Program, Indira Prajapati. The program ended July 27 with the INBRE participants making poster presentations at UAMS. The Carver program ended July 11 with a poster session at the Reynolds Center. Indira Prajapati won first place with her poster "Oxygen Sensor for Use in the Brain." Her mentor was Dr. David Paul. Dr. Julie Stenken hosted Lynsey Carrier from Grambling University in her lab. She was part of the CeMB REU program.

The Graduate Recruitment Office is hosting a series of brown bag lunches for faculty who are interested in recruiting qualified students. Let Shani Farr (sfarr@uark.edu) know

the topics in which you would be interested. The first luncheon was July 25. Dates for future lunches will be posted.



Save the Date!

The department is again co-hosting the INBRE conference October 5-6, 2012 with the departments of biological sciences and physics. Events include faculty talks, student oral presentations, workshops, and a poster session. More information to come soon!

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

August

- 10 International Graduate Student Orientation, Holcombe Hall, 9 a.m.-4 p.m.
- 13 Teaching Assistant Orientation, AR Union, 8 a.m.-3 p.m.
- 15 First Year Graduate Student Orientation, AR Union, 8 a.m.-4 p.m.
- 20 Classes begin
- 27 Chemistry labs begin

September

- 14 CUME
- 17 Department Seminar series begins with Dr. Bradley Smith of Notre Dame University. CHEM 144, 3:30 p.m.
- 24 Dept Seminar—Dr. David Case, Rutgers
- 28 CUME

Library Hours

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

Summer Hours

Monday-Thursday 8 a.m.-6 p.m.
Friday 8 a.m.-5 p.m.

August 12-18

Monday-Friday 8 a.m.-5 p.m.

Fall Hours

Monday-Thursday 8 a.m.-9 p.m.
Friday 8 a.m.-6 p.m.
Closed Saturdays and Sundays
Closed Labor Day (September 3)

