

THE MOLE STREET JOURNAL

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

JUNE 2011

VOLUME 10, ISSUE 6

Graduate Students Defend



Timothy Kum Beng



Lindsay Rutherford



Christopher C. Saunders



Joseph Smeal



Vitaly Vostrikov



Jerri Nicole Webb

Courtney Gets NSF Fellowship

Joseph Courtney, from Fayetteville, has received a prestigious Graduate Fellowship from the National Science Foundation (NSF).

This spring he graduated magna cum laude in both chemistry and physics. He was a member of **Roger Koeppe's** research group.

Courtney will pursue a doctoral degree in biophysical engineering at the University of Illinois at Urbana-Champaign.

The highly competitive fellowship provides \$30,000 a year, a one-time international travel allowance, and access to the supercomputer TeraGrid.



Joseph Courtney

Inaugural Childs Fellowship

Kelsey Sparks was the inaugural recipient of the W. Ves Childs Science Education Scholarship.

Named in honor of the former W. Ves Childs, M.S. '60, Ph.D. '63, the scholarship supports upper-classmen majoring in chemistry who intend to pursue careers in science education after graduation.



Holly Childs and Kelsey Sparks

Holly Childs and **Lisa Childs** celebrated the award with Sparks at the Fulbright College Scholarship Luncheon in October.

Faculty News

Video on the Web

The short documentary-style film *Total Synthesis - From Chemistry to Medicine* by **Matt McIntosh**, **David Clay** and Kathy Gearhart is available online at totalsynthesis.net.

Research News

The journal *SYNFACTS* has chosen the work of **Tim Beng** and **Bob Gawley** as an important highlight twice since November.

“Asymmetric Synthesis of 2-Aryl and 2-Vinyl Piperidines by Dynamic Resolution,” and “Synthesis of (S)-(-)-Ropivacaine” both appeared in the *Highlights in Current Synthetic Organic Chemistry*. The first in the metal-mediated synthesis category and the second in the synthesis of natural products and potential drugs category.

Joshua Sakon is a coauthor of papers in print and accepted for publication.

“Monthly Administration of a Novel PTH-Collagen Binding Domain Fusion Protein is Anabolic in Mice,” Ponnappakkam, T., Katikaneni, R., Miller, E., Ponnappakkam, A., Hirofumi, S., Miyata, S., Suva, L.J., Sakon, J., Matsushita, O., Gensure, R.C., *Calcified Tissue International*, 2011, Jun; 88(6):511-20.

“Prevention of Chemotherapy Induced Alopecia by A Novel PTH-Collagen Binding Domain Fusion

Protein,” Katikaneni, R., Ponnappakkam, T., Sakon, J., Matsushita, O., Gensure, R.C., has been accepted for publication in the *Journal of Endocrinological Investigation*, 2011.

Julie Stenken is the coauthor of a paper “Antibody-Enhanced Microdialysis Collection of CCL2 from Rat Brain,” Anthony W. Herbaugh and Julie Stenken, which was published online in the *Journal of Neuroscience Methods*.

DOI: 10.1016/j.jneumeth.2011.05.006
<http://www.sciencedirect.com/science/article/pii/S0165027011002640>

A paper by **Nan Zheng** “Photoinduced Cleavage of N-N Bonds of Aromatic Hydrazines and Hydrazides by Visible Light” was accepted for publication in a special topics issue of *Heterocycles of Synthesis*.

On the Go

ASMS, Denver, Colo., June 5-9

Julie Stenken and **Charles Wilkins** will attend.

Graduate student **Evgenia Akhmetova** will present a poster “Gas Phase Reactions For Optimized 9.4 T Fourier Transform Mass Spectra of [6,6]-phenyl C61-butyric Acid Methyl ester,” Evgenia Akhmetova and Charles Wilkins.

Graduate student **Sasi Muruganantham** will present a poster

“Towards Visualizing the Spatial Expression of Matrix Metalloproteinases (MMPs) Activity During the Foreign Body Response (FBR) using MALDI Imaging MS,” Sasirekha Muruganantham, Rohana Liyanage, Jackson O. Lay Jr., and Julie A. Stenken.

Wilkins is the coauthor of a paper and poster being presented by colleagues at the University of Warwick, England.

“Applications of ASAP and EESI Ionisation Approaches Coupled With Travelling Wave Ion Mobility Mass Spectrometry.”

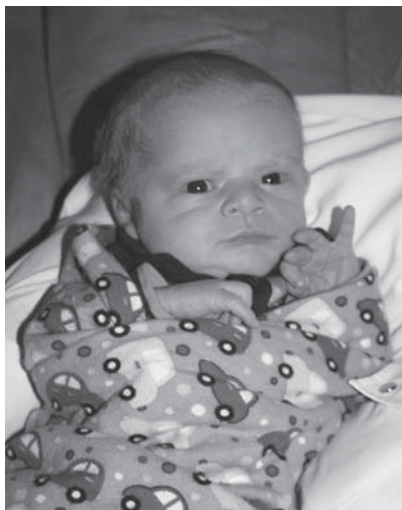
“New structural Insights into a Novel Geometry Polymeric System by Use of Shape-Selective MS Studies.”

Tomasz Janowski presented a poster “Generalized Multipole Moments and Polarizabilities, and their Use in Ultrafast Quantum Mechanics/Molecular Mechanics Monte Carlo Simulation of Solutions,” Tomasz Janowski and Peter Pulay, at the 2011 Southeast Theoretical Chemistry Association (SETCA) annual meeting at Mississippi State University May 13-14.

Graduate students **Kola Ayinuola** and **Brian Walker** will attend the 42nd National Organic Symposium, June 5-9 at Princeton University.

Ayinola will present a poster “Novel N-based Rearrangements,” Kolawole Ayinuola, Silvana Dormi, Juliette Rivero-Castro and Matt McIntosh.

Home Notes



Alumni **Mike**, Ph.D. '10, and **Lindsay Rutherford**, Ph.D. '11, welcomed the birth of their first child Noah Michael Rutherford May 12.

Baby Noah, whose initials are NMR, weighed 8 pounds 2 ounces and was 20-inches long.

At right: Noah M. Rutherford

Safety Tip

Formula for Disaster

**Broken Mercury
Thermometer + Heating
Block + Not in Hood
= Mercury Poisoning**

Student News

Grad Students Pass Cumes



Matthias Knust

Congratulations to graduate students **Matthias Knust** and **Christena Hooten Nash** who have now passed seven cumes, the number of passed exams needed to be admitted to doctoral candidacy.

Both students are alumni and entered the graduate program in analytical chemistry in 2010.

Knust is from Ingolstadt, Bavaria, Germany and is researching under the direction of **Charles Wilkins**.

Nash is from Texarkana, Ark., and also has an MAT in secondary education from the University of Arkansas. She is researching under the direction of **Ingrid Fritsch**.



Christena Nash

Graduate Students Defend

Timothy Kum Beng

Doctor of Philosophy thesis "Dynamics and Catalytic Resolution of Selected Chiral Organolithiums," under the direction of **Robert E. Gawley**.

Beng is from Kuk, NW Province, Cameroon and has a chemistry degree from University of Buea, Cameroon and a master's in chemistry from East Tennessee State University.

Lindsay Rutherford

Doctor of Philosophy thesis "Understanding the Molecular Mechanism of Fibroblast Growth Factors," under the direction of **T.K.S. Kumar**.

Rutherford is from Pleasant Hill, Mo., has a degree in chemistry from Northwestern Oklahoma State University.

Christopher C. Saunders

Doctor of Philosophy thesis "Development of Proteomic Methods for the Discovery of Proteins Containing Methionine Sulfoxide," under the direction of **Wesley Stites**.

Saunders is from Blanchard, Idaho and has a bachelor's degree from Albertson College of Idaho. He entered the graduate program in 2004 on a Doctoral Academy Fellowship and was a REU student in 2001.

Esra Seyran (CeMB)

Doctor of Philosophy thesis in cell and molecular biology "Redox Dependent Disulfide Bonds of VWF A1A2A3 Domains," under the direction of **Wesley Stites**.

She is originally from Turkey.

Joseph Smeal (MS)

Non-thesis master's degree "Imaging Mass Spectrometry Review," under the direction of **Charles Wilkins**.

Smeal is from Montgomery, Ala., and has a bachelor of science degree in chemistry from Harding University.

Vitaly Vostrikov

Doctor of Philosophy thesis "Protein-Lipid Interactions: Influence of Anchoring Groups and Buried Arginine on the Properties of Membrane-Spanning Peptides," under the direction of **Roger Koeppe**.

Vostrikov is from Moscow, Russia and has a master's degree from Lomonosov, Moscow. He participated in the REU Moscow Exchange program in 2005.

Jerri Nicole Webb

Doctor of Philosophy thesis "Conformational Studies of Homopolypeptides," under the direction of **T.K.S. Kumar**.

Webb is from Monticello, Ark., and has a bachelor of science degree from the University of Arkansas at Monticello. She entered the program in 2006 as a Distinguished Doctoral Fellow.

New Power Infrastructure



Construction on the loading dock of the Science Building

The main transformers under the Science Building loading dock were replaced the week of May 16. This is the first phase of the complete rewiring of the building. A temporary air handler was installed on the south side of the building.

The project is expected to take a few years to complete. Because of the large number of lab sessions, the only time work can continue on the project is when there are no classes.

Calendar of Events

June

- 17..... Last day to drop a SSI class with a "W"
21..... First official day of summer

July

- 01..... Last day of classes SSI
04..... Independence Day, university closed
05..... First day of SSII classes
08..... Last day to drop a SSII class without a "W"
28..... REU/INBRE poster session and luncheon

August

- 01..... Last day to drop a SSII course with a "W"
12..... Last day of classes SSII
15..... New graduate students arrive on campus
22..... First day of the fall 2011 semester

The above dates and events are listed on the department's Blackboard site
<https://learn.uark.edu/>

2011-2012 Holiday Schedule

The University of Arkansas, Fayetteville, will observe the following holidays during the period July 1, 2011 through June 30, 2012:

- July 4Independence Day
September 5Labor Day
November 24.....Thanksgiving Day
November 25.....Thanksgiving Holiday
December 23Christmas Eve
December 26Christmas Day
December 27In lieu of Veteran's Day
December 28In lieu of employee's birthday
December 29Charged to annual leave
December 30Charged to annual leave
January 2New Year's Day
January 16Dr. Martin Luther King's Birthday
March 23In lieu of George Washington's/Daisy Gatson Bates' Day
May 28Memorial Day

June Birthdays

- 02.....Jose Aldana
03.....Lorraine Brewer
09.....David Hayes
12.....Carrie Snyder
18.....Roger Williams
28.....Samrat Thapa
28.....Pooja Bajwa
28.....Shawn Fields
29.....Wally Cordes
29.....Geoffrey Keeler
29.....Derrel Walters

The publishing of birthdays is not intended to invade the privacy of anyone. If you prefer not to be included, please let us know.

Library Hours

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

Summer (May 23 to August 12)

Monday - Thursday....8 a.m. to 6 p.m.
Friday8 a.m. to 5 p.m.
Saturday - Sunday.....CLOSED

Exceptions to summer

Monday, July 4.....CLOSED

Interim (August 13 to 22)

Monday - Friday8 a.m. to 5 p.m.
Saturday - Sunday.....CLOSED

Fall hours begin August 22

Senior Walk

The Senior Walk is the university's longest tradition in miles as well as years.

Starting with the first class of 1876, every graduate's name is etched into a concrete sidewalk that winds around campus for more than five miles.

More than 140,000 graduates are now listed.

<http://campusmaps.uark.edu/322.php>

Summer Students

The department is again sponsoring an NSF supported REU program for the 23rd consecutive year.

The 10-week summer program allows undergraduate chemistry majors, who will be juniors or seniors in fall 2011, to carry out research in a chosen area.

Students are also on campus participating in the Arkansas INBRE summer research program.

At the conclusion of the program, July 28, students will make poster presentations of their research.

REU



Terry Anderson
Philander Smith College
 Hometown: Wichita, Kansas
 Mentors: Julie Stenken and Frank Hahn (Poultry Science)



Jasmine Brown
Philander Smith College
 Hometown: Jacksonville
 Mentor: Colin Heyes



Ryan Christman
Ohio Northern University
 Hometown: Archbold, Ohio
 Mentor: Nan Zheng



Edward Evans
Wabash College
 Hometown: Gulfport, Miss.
 Mentor: Paul Adams



Elaine Haas
Spring Hill College
 Hometown: Memphis, Tenn.
 Mentor: Ingrid Fritsch



Jonathan Janzen
Northeastern State University
 Hometown: Tahlequah, Okla.
 Mentor: Jingyi Chen



Ja'Qualane Scales
Philander Smith College
 Hometown: Little Rock, Ark.
 Mentor: Paul Adams



Sweta Shrestha
Cameron University
 Hometown: Kathmandu, Nepal
 Mentors: Jingyi Chen and Julie Stenken



Jin Sun Woo
Mount Holyoke College
 Hometown: Tenafly, N.J.
 Mentor: Bob Gawley



Patience Wright
Spring Hill College
 Hometown: Hartselle, Ala.
 Mentor: Bill Durham

INBRE



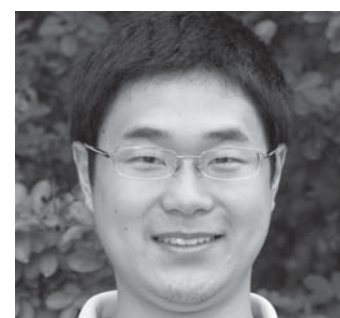
Andrea Meyers
Arkansas State University
 Hometown: Jonesboro, Ark.
 Mentor: Charles Wilkins



Ritah Nshuti
Philander Smith College
 Hometown: Kigali, Rwanda
 Mentor: Julie Stenken



Jonathan Radin
Arkansas State University
 Hometown: Jonesboro, Ark.
 Mentor: Kaiming Ye, Bio Ag Engineering



Xi Wu
Southern Arkansas University
 Hometown: Magnolia, Ark.
 Mentor: Matt McIntosh

Annual Department Float Trip

The annual department float trip was May 16. The following is a description of the float trip in the words of Frank Millett.

“18 hardy members of the department had a great canoe trip on the Buffalo River from Steele Creek to Kyle’s Landing. The weather was perfect, and the water level was good, with 26” below the Ponca low water bridge.

We had lunch on the gravel bar right across from Big Bluff and the Goat Trail. Some of us actually swam at Jim Bluff, but the water was very cold.

We then hiked up to Hemmed-in-Hollow, the highest waterfall between the Appalachians and the Rocky Mountains at 210 feet.

Hell’s Half Acre and Gray Rock were very exciting. Check out the pictures of Josh and Jiang canoeing underwater.

The Buffalo National River is one of my favorite National Parks. Faculty members in our department, including Art Fry, were inaugural members of the Ozark Society which succeeded in having the Buffalo River established as the first National River, a part of the National Park Service.

Pictures of chemistry canoe trips going back to 1973 are found on my Picasa Web site:

<http://picasaweb.google.com/millett4>.”



Jingyi Chen at Hemmed-in-Hollow



Bob Gawley and Ryan Bauer successfully get through the rapids



David Paul and Julie Stenken paddle



Aaron Yang and Josh Sakon sink while dodging a canoe that went between them



Colin Heyes and Matthias Knust