

# THE MOLE STREET JOURNAL

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

MAY 2011

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## Honors Night

The department hosted Honors Night April 21 at the UARK Ballroom on Dickson Street.

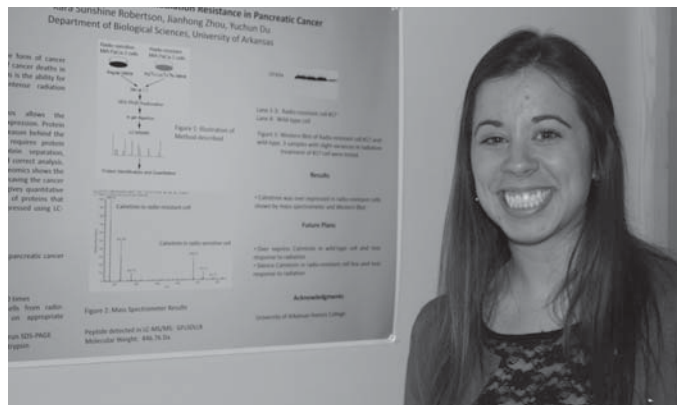
The evening began with poster presentations by Honors College chemistry majors followed by a dinner and department awards ceremony.

More than \$25,000 was awarded to chemistry students.

The scholarship recipients were selected in the fall from a pool of applicants while the awards were chosen this spring by the awards committee.



Alta Johnson, Casey Henderson and Gaya Kumar



Sunshine Robertson

Last fall 25% of all chemistry majors made the Dean's List with a 4.0 GPA. The average GPA of department undergraduates was 3.35 with 57% maintaining a 3.5 GPA or above.

Senior Honors College students in the department must make a poster presentation in addition to defending and writing a thesis.

Special thanks to Facilities Management, the Garden Room, PMC Solutions, Smith Cabinet Shop and the UARK Ballroom. Photos by Denise Greathouse.

### **American Chemical Society Awards**

Amy Carr  
Stephen Dalby  
Arshan Dehbozorgi  
Samuel Dunn  
Rebekah Langston  
Kelsey Sparks  
Molly Steen

### **Barbara Wertheim Campbell Awards**

Joseph Courtney  
David Hopkins  
Ethan Latimer  
Leah Ramey

### **A. W. Cordes Teaching Awards**

Geoffrey Keeler  
Matthias Knust  
Scott Morris

### **DuPont Scholarships**

Grant Meredith  
Ashley Rosenberg  
Molly Steen

### **Arthur and Lois Fry Scholarship**

Gayatri Suresh Kumar

### **Octa N. High Scholar**

Ethan McBride

### **Coulter Jones Award**

Anna Fielder  
Casey Henderson  
Ashley Martfeld  
Julie Tran

### **Frederick A. Kekulé Award**

Michael Mullarkey  
Colby Smith

### **Kathy Noland Chemistry Award**

Samuel McLelland

### **William K. Noyce Scholarship**

Ross Harmon  
Jonathan Schmidt  
Mary Smith

### **Jacob Sacks Award**

Rachael Pellegrino

### **Jacob Sacks Scholarship**

Christopher DuVall  
Shannon Mumma  
Ettore Rastelli

### **Honorary Scholars**

Emily Crossfield  
Chris Duvall  
Taylor Gohman  
Lauren Hall  
Ross Harmon  
Hannah Henson  
Sigrid Johannesen  
Alta Johnson  
Thomas Jones  
Matthew McMahon  
Devin O'Dea  
Kaila Pianalto  
Andrew Price  
Derek Pyland  
Sunshine Robertson  
Spencer Shinabery  
Christopher Sonntag  
Jake Usery  
Megan Wary

## Faculty News

### Research News

**Julie Stenken** was the editor and symposium coordinator for a special issue entitled "Interstitial Fluid Physiology as It Relates to Glucose Monitoring Technologies" in the *Journal of Diabetes Science and Technology*.

She also published two papers in the above issue. "Interstitial Fluid Physiology as It Relates to Glucose Monitoring

Technologies: Symposium Introduction," Natalie A. Wisniewski, Ulrike Klueh, Julie Stenken, May 2011, Volume 5, Issue 3: pages 579-582, and "Modulation of the Foreign Body Reaction for Implants in the Subcutaneous Space: Microdialysis Probes as Localized Drug Delivery/Sampling Devices," Xiaodun Mou, Michelle R. Lennartz, Daniel J. Loegering, Julie A. Stenken, May 2011, Volume 5, Issue 3: pages 619-631

### On the Go

**Julie Stenken** and graduate student **Geoff Keeler** attended the Society for Biomaterials Conference in Orlando, Fla., April 13-16.

**Ryan Tian** gave a seminar at NCTR in Jefferson April 20.

## Student News

### Vostrikov Gets Graduate Sigma Xi Award

**Vitaly Vostrikov** was awarded the Sigma Xi Aubrey E. Harvey Graduate Research Award.

The annual award is made to the graduate student who has performed the most outstanding research on the Fayetteville campus during the year. The award was established in recognition of Dr. Harvey and his contributions to



Vitaly Vostrikov

the graduate program at the University of Arkansas.

Vostrikov, a student of **Roger Koeppe**, will receive a cash award and will present a seminar to members at the final regularly scheduled meeting in May. Sigma Xi is an honorary scientific research society.

### AXE Initiates Brothers

The Alpha Sigma Chapter of Alpha Chi Sigma (AXE) inducted 15 new members into the fraternity, April 23.

Chemistry majors inducted were:

- Junior - **Jason A. Raymond**
- Sophomores - **Timothy P. Burnside**, **Evy Chang**, **Ashley N. Miller** and **Nancy T. Vo**
- Freshmen - **Kanesha D. Day**, **Megan R. Wary**, **Jessica Morales**, **Caitlen C. Stellpflug**, **Katherine M. Ramey**, **Rachael A. Pellegrino** and **Christopher E. Sonntag**

Chemical engineering major Brother Nicole Lorenz has been selected as the national 2011 Alpha Chi Sigma Scholar. She is the fourth brother from the Alpha Sigma Chapter to win the award. The chapter holds the designation of the only chapter to have four AXE scholars.

### ACS SA at Springfest

The American Chemical Society Student Affiliate (ACS SA) set up a booth and demonstrated several different chemistry experiments April 30 at Springfest.

Eight members participated, including **Ashlee Bell-Cohn**, **Dennis Gillming**, **Jared Morphew**, **Chase Ross**, **Molly Steen**, **Daniil Tchakhalian**, **Catriona Whiteside**, **Ying Xue-Shirley Xie** and Professor **Nan Zheng**.

Springfest is a community-oriented non-profit festival held annually on Fayetteville's Dickson Street.



From left: Molly Steen, Nan Zheng, Catriona Whiteside, Daniil Tchakhalian, Chase Ross, Shirley Xie, Jared Morphew, Ashlee Bell-Cohn and Dennis Gillming

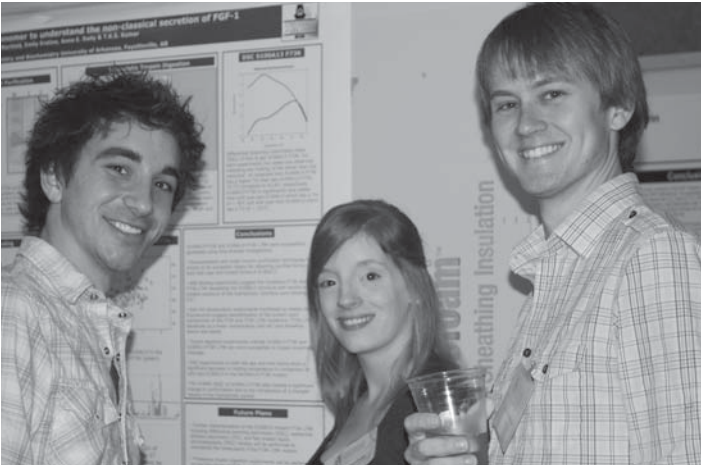
## Building Security

**Lock laboratory doors when the laboratory is not occupied.**

**Do not compromise building door locks after business hours.**

**Call UAPD (479) 575-2222 if you see suspicious people in the building.**

# Honors Night 2011



Tony Hoyt, Ashley Martfeld and Rory Henderson



David Williams, Mark Pickhardt and Courtney Cagle



Omar Salem and Amir Francis



Shannon Mumma and Chris DuVall



Jacob Wooldridge



Amy Carr



Lauren Hall, Sigrid Johannesen and Hannah Henson



Richard Rieske



Joseph Courtney



Emily Crossfield



Stephen Dalby



Hunter Dunn

## Honors Night 2011



Taylor Gohman



David Hopkins



Geoffrey Keeler



Matthias Knust



Rebekah Langston



Ethan Latimer



Samuel McLelland



Matthew McMahon



Scott Morris



Devin O'Dea



Rachael Pellegrino



Kaila Pianalto

## Honors College Chemistry Majors Poster Presentations

**Kristi Anderson** “Isolation and Purification of 619I in the Urine of Bernadelli-Seip Syndrome Patients” (Research mentor Bill Durham)

**Courtney Cagle** “Biodiversity and Prevalence of Entamoeba in the American Cockroach, Periplaneta Americana” (Research mentor Jeff Silberman, Biological Sciences)

**Joseph Courtney** “Comparison of Proline Substitutions at Positions 8 and 10 in WALP19” (Research mentor Roger Koepe)

**Chris DuVall** “Influence of Glycine Substitutions on Designed Proline-Containing Transmembrane Peptides” (Research mentor Roger Koepe)

**Amir Francis** “Membrane Interactions of Antimicrobial Retro-Lactoferricin Peptides by Solid-State NMR and Partitioning Assays” (Research mentor Denise Greathouse)

**Evan Gill** “Crystal Structure of Staphylococcal Nuclease Mutant V23L/V66I” (Research mentor Joshua Sakon)

**Lauren Hall** “The Conformational and Functional Role of Proline Residues in the Human Fibroblast Growth Factor-1” (Research mentor Suresh Kumar)

**Ali Haydar** “Rational Design of Human Fibroblast Growth Factor-1 with Enhanced Stability” (Research mentor Suresh Kumar)

**Rory Henderson** “The Involvement of PIP-2 in the Non-classical Secretion of FGF-1” (Research mentor Suresh Kumar)

**Hannah Henson** “The Structural and Functional Role of the Sole Tryptophan Residue in the Human Acidic Fibroblast Growth Factor” (Research mentor Suresh Kumar)

**Lawrence Hoyt** “Cloning and Characterization of first FNT-III Domain from Anosmin-I Gene” (Research mentor Suresh Kumar)

**Sigrid Johannesen** “Synthesis of 15 Amino Acid GTPase-binding region of Tuberos sclerosis 2 to Study its Interaction with the Ras GTPase Rheb” (Research mentor Paul Adams)

# Honors Night 2011



Derek Pyland



Leah Ramey



Ashley Rosenberg



Jonathan Schmidt



Spencer Shinabery



Molly Steen



Jake Usery



Julie Tran

## Honors College Chemistry Majors Poster Presentations

**Ethan Latimer** “Structure Determination of *Clostridium histolyticum* S2a Collagen Binding Domain and Structure Determination of Staphylococcal Nuclease I92V/V92L” (Research mentor Joshua Sakon)

**Ashley Martfeld** “Design of a novel S100A13 monomer to understand the non-classical release of FGF1” (Research mentor Suresh Kumar)

**Ethan McCormick** “Comparative Molecular Phylogeny” (Research mentor Jeff Silberman, Biological Sciences)

**Morgan Merriman** “Identification and Characterization of Heparin Binding Proteins” (Research mentor Suresh Kumar)

**Rhys Moore** “Examining the Stability of the C2B Domain of Synaptotagmin I” (Research mentor Suresh Kumar)

**Shannon Mumma** “Cross-linking Proteins with Peroxide and Iodide” (Research mentor Wes Stites)

**Devin O’Dea** “Identification of Glutamatergic Neurons in the Avian Brain with Emphasis on the Neuroendocrine System” (Research mentor Wayne Kuenzel, Poultry Science)

**Mark Pickhardt** “Purification and Characterization of recombinant L23 from *Arabidopsis thaliana*” (Research mentor Suresh Kumar)

**Leah Ramey** “Proliferation and Metabolism of Human Pluripotent Stem Cells Grown on Membrane Substrates” (Research mentor Sha Jin, Biomedical Engineering)

**Richard Rieske** “Understanding the Role of the Sole Disulfide Bond in the Structure and Function of the D2 Domain of FGFR” (Research mentor Suresh Kumar)

**Sunshine Robertson** “Comparative Proteomic Studies of Radiation Resistance in Pancreatic Cancer” (Research mentor Yuchun Du, Biological Sciences)

**Randy Roeser** “Structure Determination of Col G S3a S3b and Structure Determination of Staphylococcal Nuclease I72L/I92L” (Research mentor Joshua Sakon)

**Omar Salem** “Characterization of a Switch I mutant of the Ras protein Cdc42” (Research mentor Paul Adams)

**Jonathan Schmidt** “Surface Plasmon Resonance Affinity Analysis of Cytokines with Heparin” (Research mentor Julie Stenken)

**Spencer Shinabery** “Ruthenium(II) Photocatalyzed [3+2] Cycloaddition of Mono- and Bi-cyclic Cyclopropylamines with Olefins” (Research mentor Nan Zheng)

**Molly Steen** “Analysis of Protein Folding Through Comparison of Fluorescence vs. Hydrogen/Deuterium-Exchange and Mass Spectrometry” (Research mentor Wes Stites)

**Nicholas Tingquist** “Design of a Duet Vector to Characterize Ligand-Receptor Interactions” (Research mentor Suresh Kumar)

**Daniel Vo** “Understanding the Structure and Stability of FGF-1 in a Cellular Environment Using NMR Spectroscopy” (Research mentor Suresh Kumar)

**David Williams** “Studies Towards the Synthesis of Antascomycin B” (Research mentor Matt McIntosh)

**Jacob Wooldridge** “Development of Methods for Rapid Analysis of Nutraceutical Plant Extracts” (Research mentor Jack Lay)

## Calendar of Events

### May

- 02..... Spring seminar series concludes  
 05..... Last day of spring classes  
 06..... Dead day, no classes  
 07-13 ..... Final exams  
 14..... University commencement  
 22..... REU/INBRE summer programs begin  
 23..... First day of classes SSI  
 23..... REU/INBRE Meet the Summer Students reception  
 30..... Memorial Day, university closed

### July

- 01..... Last day of classes SSI  
 04..... Independence Day, university closed  
 05..... First day of SSII classes  
 28..... REU/INBRE poster session and luncheon

### August

- 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/>

## Meet the Summer Students

The annual reception to meet the incoming summer students (REU and INBRE) and introduce them to their research mentors and lab affiliates is Monday, May 23 at 2:30 p.m. in CHEM 105.

## University Closed for Memorial Day

The university will be closed in observance of Memorial Day, Monday May 30.

Memorial Day is a U.S. federal holiday observed on the last Monday of May. Formerly known as Decoration Day, Memorial Day commemorates U.S. soldiers who died while in the military service.

Started in the 1860's, the day often marks the start of the summer vacation season, and Labor Day its end. By the early 20th century, the day was an occasion for more general expressions of memory, as people visited the graves of their deceased relatives and became a long weekend increasingly devoted to family get-togethers and other celebrations. *wikipedia.org*

*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.*

## May Birthdays

- 05.....Jim Hinton  
 05.....Lothar Schafer  
 12.....Abigail Hubbard  
 15.....Shutang Chen  
 16.....Mark Turner  
 17.....David Clay  
 23.....Jack Lay  
 24.....Raman Subramanian  
 24.....Dan Davis  
 30.....Ryan Thurman

*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

### Spring (spring hours end May 15)

Monday - Thursday ...8 a.m. to 9 p.m.  
 Friday .....8 a.m. to 6 p.m.  
 Saturday .....CLOSED  
 Sunday.....2 p.m. to 6 p.m.

### Interim (May 16 to 20)

Monday - Friday .....8 a.m. to 5 p.m.  
 Saturday - Sunday.....CLOSED

### Summer (May 23 to August 12)

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

### Exceptions to summer

Monday, May 30.....CLOSED  
 Monday, July 4.....CLOSED

### Interim (August 13 - 22)

Monday - Friday .....8 a.m. to 5 p.m.  
 Saturday - Sunday.....CLOSED

Fall hours begin August 22