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## Mole Street Journal, August 2014

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

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**Special points of interest:**

- Sin Limites program
- Fulbright IT hires new support person
- REU program concludes
- Christena Nash defends

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## Sin Limites (“No Limits”)

**Denise Greathouse** partnered with Luis Restrepo, professor in World Languages, Literature and Cultures at the University of Arkansas, to teach a bilingual chemistry lab, Isolation of DNA from Kiwi and Strawberries, to a group of 32 local Hispanic middle-school students participating in the Sin Limites (“No Limits”) summer enrichment program aimed at improving the students’ native Spanish skills. The Sin Limites program is sponsored by the Office of Latino Academic Advancement and Community Relations and the Latin American and Latino Program, and is funded in part from a College Challenge Grant from the Arkansas Department of Higher Education. Sin Limites began two years ago as an after-school program at J.O. Kelly Middle School in Springdale, and was as extended into a two-week summer program this year for the



first time. According to Restrepo, 43% of Springdale students and 60% at J.O. Kelly Middle School are Latino. The program’s goals are to help students develop skills required for academic success and to prepare them to live in a global society. Graduate students **Ashley Martfeld Henderson** and **Venkatesan Rajagopalan** and undergraduate REU students **Jordana Thibado** and **Sara Whitlock**, and adjunct professor **Gwen Mattice** assisted with the science lab on Friday, June 27. During the activity, the middle-school students actively engaged methods involving lysing and filtering cellular membranes, precipitating DNA due to its insolubility in ethanol, and they were able to successfully isolate visible amounts of DNA. Thanks also to **David** and **Victoria Hayes** and the chemistry department for the use of the chemistry teaching labs.



<https://www.youtube.com/watch?v=sXxARH-zuqg>  
(In Spanish)

<http://languages.uark.edu/8327.php>

NWA online line, limited.

(Photos courtesy of Denise Greathouse)

## Faculty News

### Publications

Woods, S.D., R.D. Skinner, A.M. Ricca, A.T. Brown, J.D. Lowery, M.J. Borrelli, **J.O. Lay**, W.C. Culp. Progress in Dodecafluoropentane Emulsion as a Neuroprotective Agent in a Rabbit Stroke Model. *Molecular Neurobiology*, 48:2, 363-367 (2014).

Shinn, S., **R. Liyanage, J. Lay, A. Proctor**. Improved fatty acid analysis of conjugated linoleic acid-rich egg yolk triacylglyceride and phospholipid species. *J. Ag. Food Chem.* 62, 6608-6615, (2014).

Sivakumar, G., K. Jeong, **J. O. Lay**. Bioprocessing of *Stichococcus bacillaris* strain siva2011. *Biotechnology for Biofuels*, accepted 7:62 (2014) doi:10.1186/1754-6834-7-62.

Packialakshmi, B., **R. Liyanage**, K.S. Rasputra, **J.O. Lay, Jr.**, N.C. Rath. Isolation and characterization of chicken bile matrix metalloproteinase. *Poultry Science*, accepted (2014).

### On the Go

**Sakon, J., R. Bauer, K. Janowska, J. Sanders, D. Weir, M. Tucker**, et al. Collagenolysis mechanism of bacterial collagenases. Gordon Research Conference, Microbial Toxin and Pathogenicity, Waterville Valley, NH, July 20-25, 2014.

**Josh Sakon** presented a talk "Entrepreneurship" at the Gordon Research Conference Lunch & Learn meeting in Waterville Valley, NH July 21, 2014.

**Chen, Jingyi**. Site-Selective Seeded Growth of Bimetallic Nanostruc-

tures and their Catalytic Applications. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY, August 1, 2014.

**Kola Ayinuola** will present a poster "Recent advances in azole-based Claisen rearrangements" at the national ACS meeting in San Francisco, CA August 11-14, 2014. It is coauthored by **Lin Chin** and **Matt McIntosh**.

**Matt McIntosh** gave a talk "Rearrangement Pathways of the Breslow Intermediate" July 30, 2014 at the 4th annual Telluride Conference on Accelerating Reaction Discovery in Telluride, CO, coauthored by **Sefat Alwarsh** and **Kola Ayinuola**.

## News from Fulbright IT

### Goodbye:

Fulbright IT is wishing a heartfelt farewell to Ronesha Sharma. Her last day will be Friday August 1st, 2014. She joined Fulbright IT part-time in the fall of 2011. While working and taking classes she earned college credit through the Walton College Cooperative Education Program. In Spring 2013 she graduated with Bachelors of Science in Business Administration from Walton College majoring in ISYS. She will live in Bentonville with her husband and will be taking some time for herself. Her pleasant nature and friendly customer service will be truly missed around the office.



### Hello:



Fulbright IT is, however, saying "Hello!" to Page Townsley who is a recent honors graduate from Northwest Technical Institute in Springdale. He studied both the Web Programming and Network/Computer Technician curriculums. He originally joined the IT office through the internship program this past June and July. Now that his internship has concluded he will continue working part-time for Fulbright IT assisting with PC and Mac support, computer deployments, and classroom technology support. We're pleased to have him staying on with our team and trained up in time to help with the busy fall semester approaching.

## 2014 Summer REU/INBRE Program Concludes

### *Another Successful Experience!*

May 20, 2014 was the starting date for the summer undergraduate research program, which ran for 10 weeks, ending July 24. Participants represented 8 states, including 3 from AR, and 1 foreign country. Institutions of origin included (in Arkansas) Lyon College, Philander Smith University, John Brown University, Ouachita Baptist University, Univ. of Central Arkansas, and University of Arkansas. Outside of Arkansas were Mount St. Mary's, St. Norbert College, Missouri Western, Tuskegee, Fort. Valley St. University, and Saint Augustine University. Program Co-directors are **David Paul** and **Julie Stenken**.

Aside from daily research, students spent their time in weekly group meetings and Wednesday night Dinner and Dialogue meetings, featuring guest speakers Dr. William McComas (Research and Ethics) and Denise Marcia (Interview Skills, business dinner etiquette). Thursday nights were evenings out, sponsored by various REU hosting departments. They included trips to Devils Den State Park and Ozark Lanes. A highpoint of the summer was a joint meeting/dinner with the Little Rock INBRE participants, where guest speaker Aime Franco, Ph.D. from the UAMS Dept. of Physiology & Biophysics spoke on The Journey to a Research Career: The Roads Less Taken, followed by a day of hiking in the Ozarks and a tour of FutureFuels in Batesville, AR.

The conclusion of the program was July 24, where students' research was presented in poster form in a Meeting in Miniature, followed by a luncheon for students and their mentors. The Tony Jude Award was presented to T. Ryan Rogers.

#### Participant Information:

**Maria Alonzo** (INBRE), Guatemala, Lyon College. Mentor Fiona Goggin. *Identifying Molecular Determinants of Aphid Resistance in Plants*

**Terry Anderson**, AR, Philander Smith College. Mentor Jack Lay. *Comparison of Four Chromatography & Mass Spectrometry Approaches for the Characterization of Edible Oils*

**Brianna Bittner**, WI, St. Norbert's College. Mentor Julie Stenken. *Lipidomics of Macrophage Polarization*

**Sean Fritz**, PA, Mount Saint Mary's University. Mentor Julie Stenken. *Improvement upon the Sensitivity of the Dissolved Oxygen Electrode Utilizing Catalysts Normally Found in Fuel Cells*

**Portia Hahn Leat**, KS, Missouri Western State University. Mentor Jingyi Chen. *Synthesis and Optical Properties of Bimetallic Gold-Copper Nanostructures*

**Anthony Harrison**, AR, Tuskegee University. Mentor Ingrid Fritch. *Fundamental Investigations of Electropolymerized Conducting Polymers for Reproducible Modified Sensing Electrodes*



L-R back: Anthony Harrison, Terry Anderson, Ryan Rogers, Brianna Bittner, Sean Fritz, and Michael Thomas. L-R front: Joseph Koon, Maria Alonzo, Sara Whitlock, Jordana Thibado, Marissa Murchison, and Portia Hahn Leat.



**Joseph Koon** (INBRE), AR, Ouachita Baptist University. Mentor Doug Rhoads. *Gap Closure to Complete the Genome Assembly for Staphylococcus agnetis*

**Marissa Murchison**, GA, Ft. Valley State University. Mentor Colin Heyes. *Studying the Binding between Chloroplast Signal Recognition Particle Proteins using Single Molecule Fluorescence.*

**T. Ryan Rogers**, AR, University of Central Arkansas. Mentor Feng Wang. *Computational Investigation of the Surface Tension of Supercooled Water*

**Jordana Thibado**, AR, University of Arkansas. Mentor Roger Koeppel. *Influence of Cholesterol on Arginine-Containing Transmembrane Helical Peptides*

**Michael Thomas**, Washington DC, St. Augustine's University. Mentor Paul Adams. *Growth and Purification of Rheb*

**Sara Whitlock**, MO, John Brown University. Mentor Denise Greathouse. *Synthesis and Analysis of LfB-RWALP Hybrid Peptides*



**At left:** David Paul presents the Tony Jude award to Ryan Rogers

### Nash Defends

**Christena Nash** successfully defended her dissertation, "Modified Electrodes for Redox-Magnetohydrodynamic (MHD) Pumping for Microfluidic Applications" July 7, 2014. She received her BS in Chemistry in 2009, and her M.A.T. in 2010, both from the University of Arkansas. Her research mentor is **Ingrid Fritsch**. She and her husband Will have relocated near Atlanta, GA.



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

- 01 Last day of 10-week classes
- 04 Classes begin for August Intersession
- 15 August Intersession final exams
- 18-22 New Graduate Student Orientation
- 25 Fall semester classes begin, 7:30 a.m.



#### Save the Date!

The 2014 INBRE conference will be held November 7-8 in Fayetteville, AR.

### Library Hours

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

### Summer and Intersessions

#### Regular Summer Hours: May 25 – August 2

Saturday – Sunday	CLOSED
Monday – Thursday	8:00 am – 6:00 pm
Friday	8:00 am – 5:00 pm

#### Exceptions to Regular Summer Hours

Monday	May 26 (Memorial Day)	CLOSED
Friday	July 4 (Independence Day)	CLOSED

#### Intersession and Interim Hours: August 3 – 24

Saturday – Sunday	CLOSED
Monday – Friday	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. These and dissertation resources can be found on the following LibGuide: <http://uark.libguides.com/content.php?pid=123035&sid=1057466>.



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### Safety Tip: by Bill Durham

If your lab smells of solvent or other reagents, you are doing something wrong.

Fix it!!



Department of Chemistry  
and Biochemistry