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

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The Mole Street Journal

Volume 6, Issue 8

Stenken Joins Department As 21st Century Chair in Proteomics



Julie Stenken
B.S. University of Akron
Ph.D. University of Kansas

The department is pleased to announce the arrival of Professor **Julie Stenken** as the holder of the 21st Century Chair in Proteomics. Stenken will complement the analytical division.

Before joining the U of A, she spent 11 years on the Rensselaer Polytechnic Institute faculty. Over the past 20 years, she has established a strong track record in research and service. She has published 31 papers and is presently editing two books. The facilities and the interdisciplinary focus of the UA faculty were key in her decision to join the department.

The Stenken group is interested in measurements of proteins and peptides involved in chemical communication inside mammalian systems. Targeted areas of interest include proteins (i.e., cytokines) involved with orchestrating immune responses to foreign implants and peptides that play a role in addiction (neuropeptides). She currently holds two NIH grants to support this research.

Stenken has a knack for tackling difficult problems. Her interest in biological

complexity and the intricate roles that chemical communication plays form the basis of her research. In the future she hopes to foster more collaboration between chemistry and engineering on campus as well as UAMS.

She holds membership in the American Chemical Society, American Association for the Advancement of Science, Sigma Xi, Society for Free Radicals in Biology and Medicine, Society for Biomaterials and the Society for Neuroscience.

This fall she is teaching a graduate course on the topic of bioanalytical chemistry.

The Ozarks offer many opportunities for this athlete who enjoys swimming, kayaking, scuba diving, biking and hiking. Stenken looks forward to attending the many cultural and athletic events that NWA has to offer.

When not mathematically modeling diffusive transport to and from microdialysis probes, this Ohio native enjoys baking bread from scratch, without a bread machine, and reading non-fiction, especially about international travel.

Tian's Research Gets the Hits

Recent research by **Z. Ryan Tian** and his colleagues has been noted on more than 100 Web sites including a EurekAlert on AAAS, Materials in the News on MRS and Journals in the News on ACS.

Tian's research team has found a simple, inexpensive way to create a nanowire coating on the surface of biocompatible titanium that can be used to create more effective surfaces for hip replacement, dental reconstruction and vascular stenting. This material can easily be sterilized using ultraviolet light and water or using ethanol, making it useful in hospital settings and meat-processing plants. This research was reported in the journal *Chemistry of Materials*.

UA researchers include Wenjun Dong, Tierui Zhang, Lisa Cooney, Hong Wang, Yanbin Li, Andrew Cogbill and Vijay Varadan. Ying-Bing Jiang of the University of New Mexico,

and Joshua Epstein of UAMS are collaborators on the project. A provisional patent is pending for the multifunctional nanowire bioscaffolds on titanium or titanium-containing alloys such as Nitinol.

In August, intellectual Property Partners LLC, an Atlanta company that turns promising technologies into profitable ventures for the business world, obtained the global license for a multifunctional material developed by Tian. The long, flexible nanofibers are targeted to textile and filter makers. When assembled into free-standing membranes, the material, a two-dimensional "paper" made out of titanium-based nanowires, provides solutions to a variety of potential applications, including chemical and water filtration, bioseparation, solar cells, drug delivery and non-woven textiles stable at high-temperature.

Faculty News

Years of Service Awards



Jim Hinton

This month two faculty members were honored for their years of service to the U of A at the Fulbright College Faculty Convocation September

6. **Jim Hinton** has served 40 years and **Joshua Sakon** has served 10 years.

Koeppe on Sabbatical

Roger Koeppe will spend the fall semester off-campus at the department of chemistry and biochemistry at the University of California, San Diego.

Koeppe will collaborate with Dr. Stanley Opella

in research concerning methods for determining structures of membrane proteins by solid-state NMR spectroscopy.

The Opella group has pioneered methods based upon ^{15}N -NMR while the



Roger Koeppe

Koeppe lab has pioneered methods based upon ^2H -NMR.

Key goals for the collaboration will include detailed comparisons of these methods, along with comparisons of results from different types of samples, including peptides and protein domains incorporated into magnetically aligned bicelles and mechanically aligned lipid bilayers. This research gives fundamental insights regarding the structure, dynamics and function of proteins and lipids in biological membranes.

Research News

The Kumar lab published two papers in August.

“Relevance of Partially Structured States in the Non-classical Secretion of Acidic Fibroblast Growth Factor,” D. Rajalingam, I. Graziani, I. Prudovsky, C. Yu and T. K. S. Kumar (Aug. 14, 2007) *Biochemistry* (2007), 46(32) 9225-9238.

“Molecular Cloning, Overexpression, and Characterization of Human Interleukin 1 Alpha,” D. Rajalingam, D. Kacer, I. Prudovsky and T. K. S. Kumar. (Aug. 31, 2007) *Biochemical Biophysical Research Communications*. 360 (3), 604-608.

On the Go

Ryan Tian co-chaired a symposium “Nanodiagnosis and Commercialization,” and presented “Membranes of Nanowire Scaffolds for Sensing Neurochemicals

and Proteins, Filtrating Cell-Sized Particles, and Drug Delivery to the Spinal Cord,” at the annual meeting of the American Academy of Nanomedicine in San Diego, September 6-9.

Several attended the national ACS meeting in Boston in August. Presentations were made by **Ryan Tian** and graduate students **Hong Gu**, **Wei Qi** and **Shuming Zhang**. **Matt McIntosh** and graduate student **Silvana Dormi** attended.

Tian co-chaired a session “Nanoscience: Applications,” and gave two talks, “Controlled Nucleation, Growth, and Kinetics in ZnO Hierarchical Nanosyntheses,” and “Ceramic Nanowires for Diagnostic, Therapeutic, and Regenerative Nanomedicines.”

Gu presented “NMR Experiments for the Measurement of Carbon Relaxation Properties in L3c, I5n-labeled Gramicidin Channels.”

Zhang presented “Theoretical pKa Prediction for Amino Acids and Peptides.”

September Safety Tip

Do not store anything in the hallways. It is a fire code violation.

Tenure-track Faculty Search

The department is in the process of advertising for a faculty position — a physical chemist with emphasis on optical spectroscopy or an organic chemist, broadly defined.

Women and minority candidates are strongly encouraged to apply. The University of Arkansas is an Affirmative Action/Equal Opportunity Employer. All applicants are subject to public disclosure under the Arkansas Freedom of Information Act, and persons hired must have proof of legal authority to work in the United States.

Matt McIntosh chairs the organic search and **Xiaogang Peng** chairs the physical search.

In Memory

Chemist and commercial development manager **W. Eamon Carroll**, 59, died May 22. He authored 25 papers and held 17 issued or pending U.S. and foreign patents. He was an assistant professor in the department’s inorganic division from 1977-1979.

Undergraduate Scholarships

All undergraduate chemistry majors are invited to apply for department scholarships. Those students who are not in need of financial assistance can apply for the honorary scholar designation. The application deadline is October 1.

The form is @ <http://chemistry.uark.edu/1678.htm>

Family Addition



Reagan Nicole Farris

Congratulations to graduate student **Ryan Farris** and his wife Tara on the birth of their third child, Reagan Nicole, born August 22. She weighed 8 pounds and 1 ounce, and was 21 inches long. She was welcomed by her big sisters Brittany, age 5, and Alyssa, age 4.

New Graduate Students



Anupama Aggarwal

Hometown: Delhi, India
Undergraduate institution:
Delhi University



Sefat Alwarsh

Hometown: Al-Qtif, Saudi Arabia
Undergraduate institution: King
Saud University



Tim Beng

Hometown: Kuk, NW Province,
Cameroon
Undergraduate institution:
University of Buea, Cameroon
Masters institution: East
Tennessee State University



Steve Gann

Hometown: Russellville
Undergraduate institution:
Arkansas Tech University



Nick Gleason

Hometown: Cabot
Undergraduate institution:
University of Central Arkansas



Abby Hubbard

Hometown: New Philadelphia,
Ohio
Undergraduate institution: Kent
State University



Zheng Li

Hometown: Changsha, P.R.China
Undergraduate institution: Hunan
University
Masters institution: Fudan
University



Danny Sanders

Hometown: Magnolia
Undergraduate institution:
Southern Arkansas University



Maha Shrestha

Hometown: Nepal, Kathmandu
Undergraduate institution:
Tribhuvan
Masters institution: Pittsburg
State University



Brandon Suttles

Hometown: Fort Smith
Undergraduate institution:
University of Arkansas at Fort
Smith



Samrat Thapa

Hometown: Kathmandu, Nepal
Undergraduate institution: Lyon
College



Jeff Ward

Hometown: Bryant
Undergraduate institution:
Arkansas State University

Semester Calendar

September

- 07..... CUME
 10..... No seminar
 17..... Seminar - Kip Guy, St Jude Children's Research Hospital
 24..... Seminar - Sergey Kozmin, University of Chicago
 28..... CUME

Fall At-A-Glance

- October 1..... Deadline for department scholarship applications
 October 3..... Early progress grade reports for 1000 and 2000 level classes will be e-mailed to student's University e-mail account
 October 11..... Department Picnic at the Gardens
 October 11..... Trade Show, CHEM 105
 October 26..... Last date to drop a full semester class or classes with a mark of "W"
 November 9-10.. Fall INBRE conference
 November 19..... Fry Lecture, Fraser Stoddart, UCLA
 November 21..... Fall Break, NO CLASSES, U of A is open
 November 22-23.Thanksgiving Holiday, U of A CLOSED
 December 4..... Last date to officially withdraw from all full semester classes for the fall 2007 and last day of classes
 December 5..... Department Holiday Potluck
 December 5..... Dead day, NO CLASSES
 December 5..... Final copies of master's thesis/doctoral dissertations must be submitted to the Graduate School for December 2007 graduation
 December 6-12... Final exams

- Dates above are also on the Web CT calendar <http://WebCT.uark.edu/>
- For more academic dates see <http://www.uark.edu/registrar/classes/calcover.html>
- To see what is going on in the Fulbright College see <http://fulbright.uark.edu>

September Seminars

- 17..... **Kip Guy**, St. Jude Children's Research Hospital "Screening and Synthesis for Novel Antimalarials"
 24..... **Sergey Kozmin**, University of Chicago, "Merging Organic Synthesis with Chemical Biology: From Assembly to Function"

Seminars take place most Mondays during the fall semester at 3:30 p.m. in CHEM 144. A reception takes place before each seminar in CHEM 105 at 3:00 p.m. The complete list of seminar speakers is available @ <http://chemistry.uark.edu/1690.htm>

Department Picnic

The annual department picnic is October 11 at the Gardens off Razorback Rd. Note the change in location. Look for a potluck sign-up sheet soon.

Reduce - Reuse - Recycle

The Mole Street Journal is available online. If you prefer an electronic version of this newsletter contact cheminfo@uark.edu. Don't want it? Don't throw it away — recycle it in one of the many recycle bins on campus. You can also return unwanted copies to the editor. Look for sustainability notes in future issues.

September Birthdays

- 01..... Wes Stites
 02..... David Bateman
 07..... Jeff Havens
 08..... Denise Greathouse
 10..... Marti Scharlau
 13..... William Tyree
 16..... Z. Ryan Tian
 20..... Peter Pulay
 23..... Andrew Zhou
 26..... Judy Sluppick
 27..... Stella Huff
 29..... Heather Jorgensen
 30..... Roland Njabon

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

Chemistry and Biochemistry

Fall Hours

- Monday - Thursday....8 a.m. to 9 p.m.
 Friday8 a.m. to 6 p.m.
 Sunday.....2 p.m. to 6 p.m.

Closed Saturdays

<http://libinfo.uark.edu/chemistry/>

Fall Cume Dates

Cumulative exam dates for graduate students are below. Exams take place in CHEM 144 from 5 p.m. to 6 p.m.

- September 7
- September 28
- October 19
- November 9
- November 30

Save the Date

INBRE Research Conference
 November 9-10.

<http://chemistry.uark.edu/1733.htm>