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DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

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Faculty Promotions



Z. Ryan Tian



T.K.S. Kumar

Suresh Kumar and **Z. Ryan Tian** were both promoted to the academic rank of Associate Professor with tenure. The Board of Trustees and President B. Alan Sugg approved the promotions at their meeting April 16, 2010.

The promotion recognizes the significant contributions made to the University of Arkansas in the areas of teaching, research and public service.

Kumar first joined the department as a research assistant professor in 2003 and was hired as assistant professor in 2006.

Tian was hired as assistant professor in 2004.

Honors Night and Awards

The department gave more than \$10,000 in awards to 30 chemistry majors and two graduate students at Honors Night, April 22.

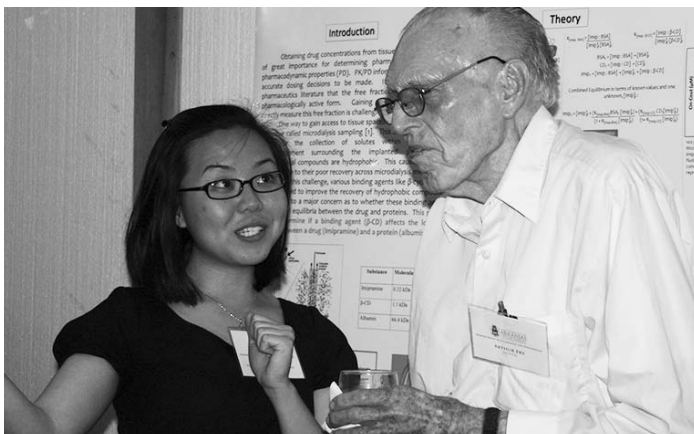
This spring the Honorary Scholar award was added to recognize students for academic success and research effort.

Junior and senior honors majors are required to make poster presentations of their research. Seniors must also submit a written thesis and give an oral defense.

There are 250 chemistry majors and 22 students pursuing a chemistry minor. Of the majors, 44 have a 4.0 GPA, 63 have between a 3.7 and 3.9 GPA and 76 are honors students.



Bill Durham congratulates Nicole Vanderbush on receiving the A.W. Cordes Teaching Award



Kellie Ong, recipient of the Barbara Wertheim Campbell Award, explains her research to University Professor Emeritus Art Fry.



Senior honors students Jaime Nelson, Zach Lewis, Elizabeth Srader, recipient of the Barbara Wertheim Campbell Award and Jessica Sutton.

Faculty News

On the Go

Julie Stenken and graduate student **Venkat Venkatakrishnan** attended the Biomaterials Society meeting, April 21-24 in Seattle. The poster "In vivo Measurement of Cytokines during Foreign Body Response using Microdialysis in a Sprague – Dawley Rat Model," was presented.

Brewer Gets Volunteer Award

Lorraine Brewer was honored as an Outstanding Volunteer for the third time for extraordinary contributions to the Fayetteville



Lorraine Brewer with senior honors major Iryna Polyakova at Honors Night

Public Schools. Brewer continued to make the April news as president of the Fayetteville Public Library Board of Trustees and for serving on the Women's History Month planning committee at the 12th annual Washington County Women's History Month banquet.

Alumni News

T.J., Ph.D. '07, and **Emily**, Ph.D. '06, **Anderson** welcomed the birth of their son Carter Patrick, April 12. Baby Carter weighed 8 pounds and 6 ounces and was 20 inches long. The family resides in South Carolina.

A symposium is being organized to honor the memory of the late **W. Ves Childs**, M.S. '60, Ph.D. '63. "Electrosynthesis and Electrochemical Processes," will take place at the Electrochemical Society (ECS) meeting in Montreal in May 2011. His passing was a great loss to the field of electrochemistry and to those who were touched by his inquisitive scientific nature.

The symposium organizers are:

- J. Weidner, University of South Carolina, weidner@cec.sc.edu
- D. T. Mah, doctor_electro@msn.com
- I. Fritsch, University of Arkansas, ifritsch@uark.edu.

All interested friends, colleagues, scientists and engineers who enjoy scientific challenges are invited to submit abstracts in topics to which he contributed. The symposium is being co-sponsored by the ECS Industrial Electrochemistry and Electrochemical, and Physical and Analytical Electrochemistry divisions.

Mary Good, M.S. '53, Ph.D. '55, dean of UALR's Donaghey College of Engineering and Information Technology, is one of six safety and quality experts named to a new independent board to advise Toyota's North American affiliates on quality and safety issues.

From the Library by Luti Salisbury

Below are a few samples of books that are available electronically through InfoLinks on **chemical safety**. You may also use the following search strategy: *(text(electronic books) and (chemicals – safety or carcinogen*))* to find more books in InfoLinks, the libraries online catalog (<http://library.uark.edu/>).

- *Bretherick's handbook of reactive chemical hazards*. (2007). (7th ed. / edited by P.G. Urben. Boston: Elsevier.
- Carson, P. A. (1994). *Hazardous chemicals handbook*. Oxford: Butterworth-Heinemann.
- Cheremisinoff, N. P. (2000). *Handbook of hazardous chemical properties*. Oxford: Butterworth-Heinemann.
- *Handbook of carcinogen testing*. (1994). (2nd ed.). Park Ridge, N.J. Noyes Publications.
- Lewis, R. J. (2003). *Sax's dangerous properties of industrial materials* (10th ed.). New York: John Wiley.
- *Patty's toxicology*. (2008). (5th ed.). New York: John Wiley.
- *Sittig's handbook of toxic and hazardous chemicals and carcinogens*. (2008). (5th ed.). Norwich, NY: William Andrew.
- *The Dictionary of substances and their effects*. (2005). (3rd electronic ed.). Royal Society of Chemistry.

Safety Tip

Take a few minutes to consider what you are doing when you are wearing gloves.
***Are you working in the most safe manner?
 Or simply spreading a hazard?***



Bob Gawley, Wes Stites and Frank Millett visit with 2010 Fry Lecturer Dieter Seebach. The Fry Lecture is endowed by Holly Childs and the late W. Ves Childs.

Student Awards



Drew Avery
ACS Award



Joseph Courtney
ACS Award



Omar Salem
ACS Award



Mary Smith
ACS Award



Roger Williams
A. W. Cordes Award



Rory Henderson
Coulter Jones Award



Tony Hoyt
Coulter Jones Award



David Joseph
Coulter Jones Award



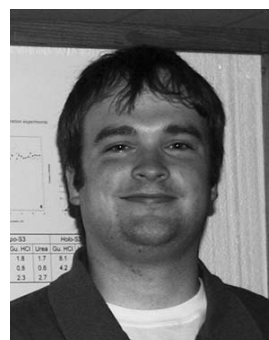
Brian St. Clair
Coulter Jones Award



Ryan Shinabery
Frederick A. Kekulé Award



Sigrid Johannesen
Jacob Sacks Award



Ryan Bauer
Honorary Scholar



Hunter Dunn
Honorary Scholar



Chris Duvall
Honorary Scholar



Amir Francis
Honorary Scholar



Rebekah Langston
Honorary Scholar



Shannon Mumma
Honorary Scholar



Kaila Pianalto
Honorary Scholar



Christina Ragland
Honorary Scholar



Leah Ramey
Honorary Scholar

Honors Night Poster Presentations



From left: Molly Steen, Kristi Anderson and Kirby Weltson; Tyler Rogers.



From left: Caitlin Williams; Nick Tinquist; Rhys Moore and Ashley Martfeld.

Andrew Avery "Effect of Osmolytes on Protein Stability" (T.K.S. Kumar)

Ryan Bauer "Crystallographic Study of Clostridial Collagen Binding Domain" (Joshua Sakon)

Joshua Brown "Development of Bicelles Containing Anionic Lipids to Characterize Cationic Membrane Active Peptides by NMR Spectroscopy" (Denise Greathouse)

Joe Bruton "Redox-Magnetohydrodynamic Microfluidics with Magnetic Field Parallel to Microelectrode Chip" (Ingrid Fritsch)

Geri Burkett "Binding of Antimicrobial Lactoferricin Peptides to Targets in the Angiogenesis Pathway" (Denise Greathouse)

Jacob Burns "Determination of Hydrazines Using Microchip Capillary Electrophoresis" (Bob Gawley)

Kaitlin Castleberry "The Interaction of Ferredoxin with Cyanobacterial Anabaena FNR (Part 1) and Developing an Expression System for Chlamydomonas plastocyanin (Part 2)" (Dan Davis)

Joseph Courtney "Solution NMR Investigation of the Influence of Proline upon the Folding of a Membrane-

Spanning Helical Peptide" (Roger Koepp)

Christopher DuVall "The Effects of Leucine-to-Glycine Mutations in a Proline-Containing Membrane-Spanning Peptide" (Roger Koepp)

Amir Francis "Synthesis and Characterization of Antimicrobial Retro-Lactoferricin Peptides" (Denise Greathouse)

Cory Garren "Understanding the Role of Ankyrin domain of the 43-kDa subunit of the Chloroplast Signal Recognition Particle in Protein Targeting" (T.K.S. Kumar)

Lauren Hall "The Conformational and Functional Role of Proline in Human Fibroblast Growth Factor-1" (T.K.S. Kumar)

Katie Hamblin "A Biophysical Investigation of the Non-Classical Release Complex of Fibroblast Growth Factor-1 (FGF-1)." (T.K.S. Kumar)

Ali Haydar "Rational Design of Human Fibroblast Growth Factor With Enhanced Stability" (T.K.S. Kumar)

Rory Henderson "Determination of Backbone Dynamics of the C2a Domain of Synaptotagmin-1" (T.K.S. Kumar)

Student Awards



Matthew Sharum
Honorary Scholar



Galen Tobey
Honorary Scholar

Not pictured:

- **Rodney LaGrone** - ACS Award
- **Timothy Burnside** - Kathy Noland Chemistry Award
- Honorary Scholars - **Jacob Dufour**, **Shigehiro Komatsu**, **Matthew McMahon**, **Andrew Price** and **William Stanton**.

Hannah Henson "Investigation of W121 on the Conformation and Functional Properties of the Human Acidic Fibroblast Growth Factor-1" (Anna Daily)

Lukas Hockman "FRET Experiments with Homo-Polypeptides and Collagen Binding Proteins" (Colin Heyes)

Anthony Hoyt "Cloning and Characterization of FNT-1 and D2-D3-TM-JX domains from Kal-1 and FGFR-1 genes" (T.K.S. Kumar)

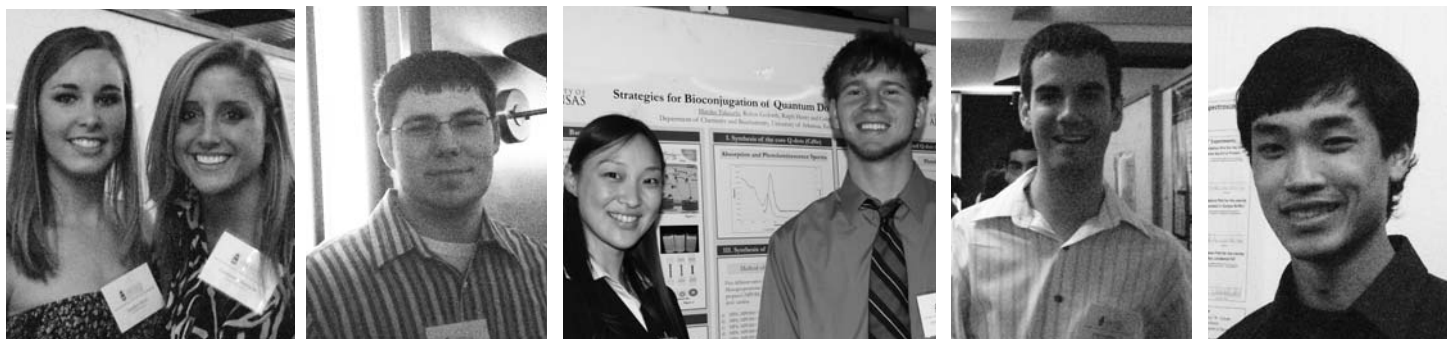
Sigrid Johannesen "Synthesis of 15 Amino Acid GTPase-binding region of Tuberosin Sclerosis 2" (Paul Adams)

R.J. LaGrone "Microdialysis Affinity Enhancers and Their Effect on the Localized Equilibria Present Between Hydrophobic Drugs and Proteins" (Julie Stenken)

Zachary Lewis "Development of a New Seven-membered Carbene: Dimethyldiazapene Carbene and 2,7-Ditertbutylcycloheptatriene Carbene" (Neil Allison)

Ashley Martfeld "Investigation of the FGF-1 Non-Classical Release Pathway by Defining The S100A13/Annexin 2 Interaction" (T.K.S. Kumar)

Honors Night Poster Presentations



From left: Lauren Hall and Hannah Henson; Jacob Wooldridge; Hiroko Takeuchi and Jonathan Schmidt; Cory Garren; Daniel Vo.



From left: Geri Burkett; Lukas Hockman; John Sherrill; Jacob Burns; Kaitlin Castleberry, Katie Hamblin and Natalie White.

Rhys Moore "Examining the Structural Stability of C2B Domain of Synaptotagmin B Using Multi-Dimensional NMR Spectroscopy" (T.K.S. Kumar)

Shannon Mumma "Exploring Novel Chemistry of the Amino Acid Methionine" (Wes Stites)

Jaime Nelson "Synthesis of Sclerophytin-Inspired Isobenzofurans" (Matt McIntosh)

Kellie Ong "Optimizing the Biofunctionalized-Surface of Quantum Dots for Conjugation to cpSRP43 Protein" (Colin Heyes)

Mark Pickhardt "Purification and Characterization of L23" (T.K.S. Kumar)

Iryna Polyakova "Determining Uptake and Cytotoxicity of Quantum Dots" (David McNabb (BIOS))

Christina Ragland "Exploration of Early Solar System History through Induced Thermoluminescence Studies" (Derek Sears)

Tyler Rogers "Pressure and Temperature Sensitive Photoluminescent Paints" (David Paul)

Omar Salem "The Characterization of a switch one mutant of the Ras protein Cdc42" (Paul Adams)

Jonathan Schmidt "Surface Plasmon Resonance Affinity Detection of Cytokine Immunological Signaling Proteins" (Julie Stenken)

John Sherrill "Expression Optimization of Cdc42(F28L_DL8) a Double Mutant of the Rho-Family Protein, Cdc42" (Paul Adams)

Elizabeth Srader "Installation of the C14 and C15 Stereocenters in Antascomicin B" (Matt McIntosh)

Brian St. Clair "Production, Mutation, and Oxidation-Reduction Properties of Cytochrome C6 of Chlamydomonas Alga" (Dan Davis)

Jessica Sutton "A Study of the Synthesis and Chemistry of a Transition Metal Complexed Quinone" (Neil Allison)

Molly Steen "A Dynamic Light Scattering Study: Analyzing Protein Denaturation" (Wes Stites)

Hiroko Takeuchi "Strategies for Bioconjugation of Quantum Dots to cpSRP43 Protein" (Colin Heyes)

Nicholas Tingquist "Design of a Monomeric Form of S100A13" (Anna Daily)

Daniel Vo "Understanding the structure and stability of FGF-1 in a cellular environment using NMR spectroscopy" (T.K.S. Kumar)

Kirby Welston "Base Hydrolysis Breakdown of the Energetic Material 2,4,6-trinitrophenol" (Wes Stites)

Natalie White "Overexpression and Biophysical Characterization of Human Interleukin 1 α " (T.K.S. Kumar)

Caitlin Williams "Studies of the Limitations Associated with Electrochemical Immunoassay Microarrays" (Ingrid Fritsch)

David Williams "Studies Towards the Synthesis of Antascomicin B" (Matt McIntosh)

Peter Wolfenberger "A Search for Nutrient Retention Variation within the Genus Chironomidae" (Michelle Evans-White)

Jacob Wooldridge "Thermal and Temporal Degradation of Vegetable Oils" (Jack Lay)

Calendar of Events

May

01-07	Final exams
08	Commencement
10	Department float trip
16	REU students arrive
16	Last day to receive 100% cancellation of fees for summer session I
17	Meet the summer students reception
17	First day SSI
18	Last day to register for SSI
20	Last day to drop a SSI course without a "W"
31	Memorial Day holiday, university closed

June

14	Last day to drop a SSI course with a "W"
25	Last day SSI
24	Lois Geren retirement party
27	Last day to receive 100% cancellation of fees for summer session II
28	First day SSII
29	Last day to register for SSII

July

01	Last day to drop a SSII course without a "W"
05	Independence Day, university closed
22	REU poster session and luncheon
23	Scientific Solutions vendor show
26	Last day to drop a SSII class with a "W"

August

06	Last day SSII
23	First day fall semester

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

Department Float Trip

For at least 40 years the department has gathered to float the Buffalo River. **Frank Millett** has organized the trip for many years and fondly refers to the river as one the "eight wonders of the world."

The carpool will meet at 8 a.m. Monday, May 10. The cost of canoe rental is about \$25 per person. All are invited

Contact millett@uark.edu if you plan to attend.

Meet the Summer Students

Meet the summer REU and INBRE students at a reception Monday, May 17, from 2:30 p.m. to 3:30 p.m. in CHEM 105

The University of Arkansas will be CLOSED Monday, May 31 for Memorial Day

May Birthdays

03	Mingzhao Zhu
05	Jim Hinton
05	Lothar Schäfer
06	Rusty Scroggins
12	Abigail Hubbard
16	Mark Turner
17	David Clay
19	Chad SeEVERS
23	Jack Lay
24	Dan Davis
29	Anne Froyd-RankenberG
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>

Spring hours

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

Exceptions to regular hours

May 9	CLOSED
May 10-14	8 a.m. to 5 p.m.

Summer hours (May 17 - August 18)

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

Exceptions to summer hours

May 31	CLOSED
July 5	CLOSED

Lois Geren Retirement Party

Research Assistant Professor **Lois Geren** is retiring. A fish fry celebration will take place Thursday, June 24 at 5:30 p.m. at the The Gardens pavilion on Razorback Road, south of the basketball arena. All are invited.

RSVP to cheminfo@uark.edu or 5-5198 by June 18.