



WICHITA STATE
UNIVERSITY

FAIRMOUNT COLLEGE OF
LIBERAL ARTS AND SCIENCES

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SHOCKER CHEM



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From the Chair...

The end of the Spring semester always brings with it a sense of transition in the university community. The campus sees a dramatic decrease in the number of students and many faculty members take a few months off from their teaching responsibilities. For chemistry faculty and graduate students, the summer provides a great opportunity to ratchet up their research efforts, finish up those manuscripts that have been sitting on their computers for months, attend professional conferences, hurriedly complete grant proposals, and of course prepare for their Fall classes.



Ten years ago, however, the end of the Spring 2001 semester marked an even greater transition for the Wichita State University Department of Chemistry – it was MOVING DAY! It is hard to believe, but it has been a full decade since we moved into the fully renovated McKinley Hall. It had been a trying couple of years, as we dealt with shared research labs, dragging materials to other buildings for lecture demonstrations, and constant construction noise and dust. But, with the start of the Fall 2001 semester, we welcomed our students to a modern chemistry instructional and research facility within the facade of a historic building. And a few weeks after the horrible events of 9/11, we celebrated the rededication of McKinley Hall with a lecture by Watkins Visiting Professor Ahmed Zewail of Caltech.

Ten years later, much has changed, and yet much remains the same. Those who graduated in that year would recognize most of the faculty, although some have retired, two have arrived since then, and we will add another this Fall. We have added a lot of new instrumentation and updated our courses to keep them in line with the constantly changing world of chemistry. Our faculty and graduate students continue to push forward the boundaries of science, receiving external funding for their research projects, patenting inventions, and publishing papers in premier journals – all enhanced by our up-to-date environment. Our students and postdocs have gone on to successful careers in medicine, industry, academia, and other realms and each new class reinvigorates our drive to provide a sound education to our students while making important contributions to the body of scientific knowledge and technological development.

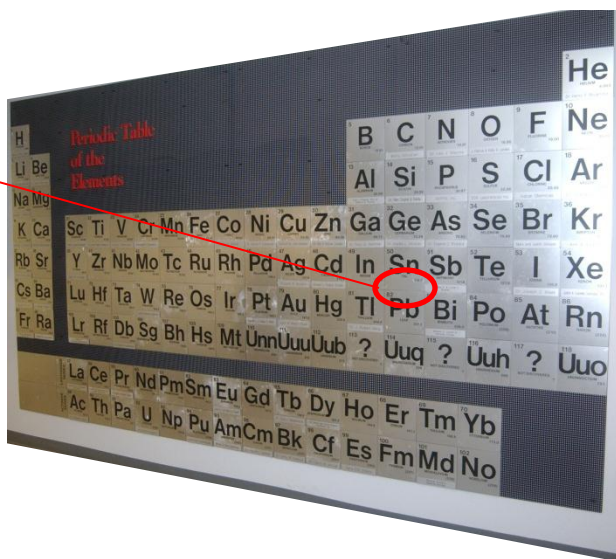
As we prepare to commemorate ten years in the “new” McKinley Hall and look forward to the next ten years, we will appropriately welcome, as our 2011 Watkins Visiting Professor, one of Professor Zewail’s colleagues at Caltech, David Tirrell. He will visit WSU on November 7th and 8th. I welcome you to come and hear him speak and, for those of you who have not visited in the 21st century, come see how things have changed.

I wish you all a happy, healthy, and safe summer.

David M. Eichhorn

Make a donation to the Wichita State Chemistry Department

Your
Name
Here?



In previous issues of *ShockerChem*, this spot has been occupied by reports of generous donations to the Department of Chemistry at Wichita State University. This issue is no exception, but the donor is someone you know very well – YOU!

Wichita State, of course, is one of the six regents' institutions in the state of Kansas. What, exactly, does that mean? Financially, it means that we receive support from state funds. In the past, that support represented a good portion of the university's operating budget – 78% in 1975. But over the years, this support has decreased, so that in the fiscal year ending June 2011, the state money available to support the operating costs at Wichita State represent only 53% of the total operating budget. Of course, this means that the university is increasingly dependent on other sources of income. A significant source of income is student tuition and fees, but the university is always reticent to raise these too quickly, since our goal is to provide quality, but affordable, education.

Therefore, in order to continue our mission, we are forced to rely on private donations to close the gap. Ten years ago, as we completed the renovation of our building, we engaged in a capital campaign to insure that the instrumentation contained within McKinley Hall was as up-to-date as the building itself. Thanks to the hard work of the chair of the capital campaign, **Ronald Wilson**, and the then-chair of the Chemistry Department, **Paul Rillema**, and the generosity of many donors, we were able to accomplish this goal. But our needs continue to grow. The prices of chemicals rise faster than those of other products; instruments need to be maintained, repaired, and replaced; graduate students need to be supported so that they can concentrate on their research.

For this reason, we turn to you. There are many ways in which you can help the WSU Chemistry Department continue to serve its students and stay at the cutting edge of chemical research. For those of you who have made donations in the past, we thank you and ask if you can help us once again. For those of you who have never donated, we ask you to think back to your professors, TAs, and fellow students as you pursued your degree. If you have the ability to give back to the department at this time, please consider doing so. Any amount is welcome and appreciated. If you can afford a donation of \$1000, we will be happy to honor you with an element on the Periodic Table displayed across from the departmental office. You may wish to establish a Graduate Assistantship or Fellowship to support graduate students or an undergraduate Scholarship to help deserving chemistry majors to offset some of the financial burden of attending college. You might prefer to help with the purchase of a new instrument for undergraduate teaching or graduate research or to underwrite visiting scholars or summer research fellows. Or you might simply want to donate to our general fund and let us use the money where it is most needed.

If you are interested in pursuing a donation, fill out the form on the back page of this newsletter or contact our representative at the WSU Foundation, Mike Rishell, for more information. He can be reached at michael.rishell@wichita.edu. We thank you in advance for your generous support!

RECENT DEPARTMENTAL PUBLICATIONS

Groutas, WC; Dou, DF; Alliston, KR; "Neutrophil elastase inhibitors" *Expert Opin. Ther. Pat.* **2011**, 21,339-354.

Wijesinghe, CA; El-Khouly, ME; Subbaiyan, NK; Supur, M; Zandler, ME; Ohkubo, K; Fukuzumi, S; D'Souza, F; "Photochemical Charge Separation in Closely Positioned Donor-Boron Dipyrin-Fullerene Triads" *Chem-A Euro. J.* **2011**,17, 3147-3156.

Koralegedara, MB; Aw, HW; Burns, DH; "Initial Structural Studies of Charged Receptors That Bind to Inorganic Phosphate Anion and to an Anionic Phospholipid Found in Bacterial Membranes" *J. Org. Chem.* **2011**, 76, 1930-1933.

Das, SK; Subbaiyan, NK; D'Souza, F; Sandanayaka, ASD; Hasobe, T; Ito, O; "Photoinduced processes of the supramolecularly functionalized semi-conductive SWCNTs with porphyrins via ion-pairing interactions" *Energ. Environ. Sci.* **2011**, 3, 707-716.

Cruz, AJ; Siam, K; Rillema, DP; "Dicyano and Pyridine Derivatives of beta-Carotene: Synthesis and Vibronic, Electronic, and Photophysical Properties" *J. Phys. Chem. A.* **2011**, 115, 1108-1116.

Stranius, K; Jacobs, R; Maligaspe, E; Lemmetyinen, H; Tkachenko, NV; Zandler, ME; D'Souza, F; "Excitation transfer in metal-ligand coordinated free-base porphyrin-magnesium phthalocyanine and free-base porphyrin-magnesium naphthalocyanine dyads" *J. Porphy. Phthalocya.* **2010**, 14, 948-961.

Groenewold, GS; van Stipdonk, MJ; Oomens, J; de Jong, WA; Gresham, GL; McIlwain, ME; "Vibrational spectra of discrete UO₂²⁺ halide complexes in the gas phase" *Int. J. Mass Spectrom.* **2010**,297, 67-75.

Dou, DF; Viwanathan, P; Li, Y; He, GJ; Alliston, KR; Lushington, GH; Brown-Clay, JD; Padmanabhan, R; Groutas, WC; "Design, Synthesis, and In Vitro Evaluation of Potential West Nile Virus Protease Inhibitors Based on the 1-Oxo-1,2,3,4-tetrahydroisoquinoline and 1-Oxo-1,2-dihydroisoquinoline Scaffolds" *J. Comb. Chem.* **2010**, 12, 836-843.

Sandanayaka, ASD; Maligaspe, E; Hasobe, T; Ito, O; D'Souza, F; "Diameter dependent electron transfer in supramolecular nanohybrids of (6,5)- or (7,6)-enriched semiconducting SWCNT as donors and fullerene as acceptor" *Chem. Commun.* **2010**, 46, 8749-8751.

Pietrzyk, A; Suriyanarayanan, S; Kutner, W; Maligaspe, E; Zandler, ME; D'Souza, F; "Molecularly imprinted poly[bis(2,2'-bithienyl)methane] film with built-in molecular recognition sites for a piezoelectric microgravimetry chemosensor for selective determination of dopamine" *Bioelectrochemistry.* **2010**, 80, 62-72.

Hill, JP; El-Khouly, ME; Charvet, R; Subbaiyan, NK; Ariga, K; Fukuzumi, S; D'Souza, F; "Effect of anion binding on charge stabilization in a bis-fullerene-oxoporphyrinogen conjugate" *Chem. Commun.* **2010**, 46, 7933-7935.

Chemistry Students Win Research Awards

The university-wide **Undergraduate Research and Creative Activities Forum (URCAF)** was held on April 5th. In conjunction with this forum, students in the Natural Sciences competed for the **Alvin and RosaLee Sarachek Award for Excellence in Undergraduate Natural Sciences Research**. Two chemistry students won awards in this competition – **Ashley Lida-Venegas** won 2nd place in Life Sciences for her work with Dr. Bann and **Ramon Nola** won 2nd place for his work with Dr. D'Souza. On May 4th, the **Graduate Research and Scholarly Projects Symposium (GRASP)** was held in the Marcus Center. Two chemistry graduate students won awards for their oral presentations – **Navaneetha Subbaiyan** won 2nd place for his work with Dr. D'Souza and **Viet Le** won 5th place for his work with Dr. Wimalasena.



Viet Le receives award from Assoc. Dean of the Graduate School, Abu Masud

The **Capitol Graduate Research Summit** is held yearly at the State Capitol building in Topeka and features graduate students from all disciplines at WSU, KU, and KSU presenting posters on their research. This year, **Viet Le** won first place among the WSU participants in a competition sponsored by KansasBio.

Congratulations to all these students!

Undergraduate Chemistry Awards Ceremony

On May 12, the Chemistry Department held an awards ceremony, hosted by Dr. English, to honor the undergraduate chemistry award winners. In addition to the local ACS student and Sarachek Award winners, the following were recognized:

Merck Index Award – **David Mettman**



David Mettman with the Merck Index, accompanied by Professors Eichhorn and English

CRC Award - **My Hoa Seiwert**

My Hoa Seiwert receives the CRC Handbook from Prof. Eichhorn



ACS Analytical Chemistry Award – **Rachel Jacobs**

ACS Inorganic Chemistry Award – **Anh Tran**



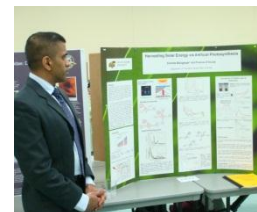
Rachel Jacobs receives award from Prof. Eichhorn

KINBRE Scholars:

Keith Travis
Roxanne Uy
Vy Nguyen

Eranda Maligaspe wins Outstanding Doctoral Dissertation award

Each year, the WSU Graduate School awards the Dora Wallace Hodgson Outstanding Doctoral Dissertation Award to one graduate student. The student must be nominated by his/her department and the applications are reviewed by a committee of faculty members from all colleges. This year, the award was given to **Eranda Maligaspe**, who received his Ph.D. in Fall 2010 under the direction of Dr. D'Souza. The title of Dr. Maligaspe's dissertation is "Carbon Nanostructured Based Donor-Acceptor Conjugates for Light-Induced Energy and Electron Transfer." Eranda is currently doing postdoctoral work on metal-organic frameworks with Prof. Adam Matzger at the University of Michigan. Eranda returned to Wichita to receive his award at the GRASP symposium.



Maligaspe with his poster at GRASP 2010

Paul Rillema receives WSU President's Distinguished Service Award

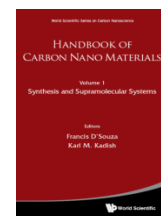
At the Shocker Pride celebration on May 3rd, President Beggs honored four members of the WSU community with the President's Distinguished Service Award. Among them was **Paul Rillema**. In his remarks, President Beggs highlighted Dr. Rillema's service as chair of the department during the renovation of McKinley Hall, his work to improve the infrastructure of the Chemistry Department with the acquisition of new instrumentation, and his membership on numerous university committees. Congratulations Paul!



Francis D'Souza edits nanomaterials handbook



Francis D'Souza, along with University of Houston chemistry professor Karl Kadish, has edited the first two volumes of a new series, *Handbook on Carbon Nanomaterials*, published by the World Scientific Press. These volumes feature chapters by international experts covering many aspects of fullerenes and carbon nanotubes. Further volumes are expected to be published in the near future. For more information and to place an order, go to www.worldscibooks.com/chemistry/7976.html.



WSU students recognized by the Wichita Section of the American Chemical Society



At the April 26th meeting of the ACS Wichita Section, held at Newman University, outstanding chemistry students from member colleges and universities were recognized. Two WSU students were chosen for this honor. **Roxanne "Adi" Uy** (far left) was honored as Outstanding Graduating Senior and **Logan Ouderkirk** (left) was named Outstanding Freshman Chemistry Major. **Dr. Jim Bann**, who is Chair of the Wichita Section of the ACS, presented both of these students with their awards.



Chemistry Department Graduates for Academic Year 2010-2011

Undergraduate Degrees

Summer 2010

Rebecca Gabriel	Chemistry-Biochemistry
Ali Jehan	Chemistry BS
Mohd Firdauze Mohtar	Chemistry-Biochemistry

Fall 2010

Ryan Delaughder	Chemistry-Business
Anna Harmon	Chemistry BS
Felicia Hubbard	Chemistry Pre-Medicine
Jennifer Padakis	Chemistry-Biochemistry
Jimmy Phan	Chemistry-Biochemistry
Ryan Ridder	ACS Biochemistry
Vincent Tran	Chemistry-Business
Nhu Truong	Chemistry Pre-Medicine
Heather Wade	Chemistry-Biochemistry

Spring 2011

Brian Asbury	BA Field Major-Chemistry
Joseph Bergkamp	Chemistry-Business
Matthew Blue	Chemistry Pre-Medicine
Nick Bruch	Chemistry Pre-Medicine
Alicia Calvert	Chemistry Pre-Medicine
Julie Dinh	Chemistry Pre-Medicine
Aunna Dover	BA Field Major-Chemistry
Jennifer Duong	BA Field Major-Chemistry
Christopher Havey	BA Field Major-Chemistry
Steve Howard	Chemistry-Business
Shina Hutchinson	Chemistry Pre-Medicine
Colin Kaufman	Chemistry-Biochemistry
Ashley Lida-Venegas	Chemistry-Biochemistry
Kale Meeks	Chemistry Pre-Medicine
Daniel Mettman	Chemistry Pre-Medicine
David Mettman	BA Field Major-Chemistry
Laura Morales	Chemistry Pre-Medicine
Vy Nguyen	Chemistry BS
Samuel Nyangi	Chemical Science
Tasha Pierson	BA Field Major-Chemistry
Kyle Rowe	Chemistry Pre-Medicine
Jordan Smith	Chemistry-Biochemistry
Serge Srou	Chemistry Pre-Medicine
Keith Travis	ACS Biochemistry
Roxanne Adeline Uy	Chemistry BS
Tam Vo	Chemistry-Business
Kelsey Witherspoon	Chemistry Pre-Medicine
Rami Zayed	Chemistry-Biochemistry

Graduate Degrees

Summer 2010

Manjula Koralegedara	PhD (Burns)
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Fall 2010

Wei Huang	PhD (Rillema)
Anusha Dissanayake	MS (Stevenson)
Hong Aw	MS (Burns)
Eranda Maligaspe	PhD (D'Souza)

Spring 2011

Kankani Rajapaksha	PhD (Bann)
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ACS Student Affiliates Chapter

The major activity of the ACS Student Affiliates Chapter during the past year was to organize a two-day program for undergraduate students attending the Midwest Regional Meeting. The first day featured a plenary lecture by Kansas State University Chemistry professor Christine Aikens, who spoke on "Theoretical Developments of Bio-Inspired Water Splitting Photocatalysts," followed by oral and poster presentations by undergraduate researchers from across the Midwest Region.



The WSU organizing crew

The focus of the program shifted for the second day, emphasizing methods for involving kids in chemistry. The program featured a chemistry demonstration by Janice Crowley, supported by her Chemistry Wizards from Wichita Collegiate School. This was followed by group presentations from a number of ACS Student Affiliate groups, including one by Allyson Jones and Anh Tran from WSU.



Anh and Allyson

The co-presidents of the ACS Student Affiliates at WSU for the 2011-2012 academic year will be Sarah Jack and Carmen Gott. For information regarding membership, activities, or other questions, contact them at acs.wsu@gmail.com.

New Departmental Instrumentation

The Spring semester saw the arrival of three new pieces of departmental equipment as we continue to improve and update our infrastructure for teaching and research. Room 406 is now the Microscopy Lab, with the arrival of two new microscopes for use in our biochemistry research. The



Zeiss Axiovert 100TV



Nikon Eclipse

Department of Biological Sciences was no longer using their Zeiss Axiovert 100TV confocal microscope, so they generously donated it to us. In addition, Dr. Wimalasena obtained a grant from the Kansas IDeA Network of Biomedical Research Excellence to aid in the purchase of a Nikon Eclipse inverted phase-contrast/fluorescent microscope. Both of these instruments are now in place and up and running.

With the help of the College of Liberal Arts and Sciences and the Office of Research Administration, the department purchased a new solvent purification system. This piece of equipment allows for the removal of water from seven solvents – THF, DMF, methanol, hexanes, acetonitrile, dichloromethane, and ethyl ether – by passing the solvent through a column of activated molecular sieves. These systems are becoming common in chemistry departments, as they allow access to anhydrous solvents without having to distill them from active metals or other drying agents. Synthetic chemistry groups in the department will now be able to get rid of most of their solvent stills. As stills are one of the most common sources of fires in chemistry labs, this acquisition will greatly improve the safety of our labs and our students.



Help the WSU Chemistry Department with your generous gift

In order to continue our mission of excellence in research and education, we need your help. Please indicate below the level of support you wish to pledge, or contact Mike Rishell (michael.rishell@wichita.edu). You may also pledge online at <https://secure.wichita.edu/foundation/newgift1.asp> (be sure to select "Other" and specify "Chemistry Department").

Name(s): _____ WSU degree(s) and date(s): _____

Address: _____

Phone: _____ email: _____

Pledge: \$10,000 \$5000 \$1000 \$500 \$250 \$100 Other _____

Check is included (made out to Wichita State University) Please send me a bill

I would like to be contacted regarding a donation

Please send this form to: WSU Foundation, 1845 N. Fairmount, Box 2, Wichita, KS 67260-0002 – Attn. Mike Rishell