



## American Chemical Society Wichita Section

**November Newsletter**  
Stephen Donnelly, Editor

**Next Sectional Meeting**  
**Friday, November 11th**  
**Dugan-Gorges Conference Center**  
**Newman University**

**Poster viewing** 5:00 p.m.

We will be presenting student (Graduate and Undergraduate) posters that were presented at the Midwest Regional Meeting in St. Louis. There will be a small prize for the best poster!

**Meal (optional):** 6:00 p.m.

Dinner will be served in Dugan-Gorges Conference Center at Newman University. Cost is \$10.00, and the ACS will cover half the cost for students. Please RSVP to Alan Oberley (316-942-4291, ext 2443 or oberleya@newman.edu) by Monday, November 7<sup>th</sup>.

**Meeting:** 7:00 p.m.

The meeting will take place in the same room as the meal. Dr. Wayne Jones will present.

Newman University is located along US-400 /US-54 just south of the Meridian/Edwards exit in Wichita. Directions to get to the Neman Campus can be found at:

<http://www.newmanu.edu/campus-map>

**Speaker:** Dr. Wayne Jones

**Title:** "Inorganic/Organic Hybrid Structures for Photovoltaics: Low cost roll to roll processing of solar cells."

The preparation of competitive solar energy conversion technologies has been limited by the cost and efficiency of modern materials. We have been developing new approaches to layered inorganic/organic photovoltaic materials on flexible substrates. The flexible thin film solar cell is based

on a combination of organic bulk heterojunction strategies with semi-conductor nanostructures. These hybrid inorganic/organic systems require development of new materials and processing technologies in order to make them suitable for low cost roll-to-roll manufacturing. Titanium dioxide nanoparticles, conducting polymer films such as polyethylenedioxythiophene (PEDOT) and polyaniline (PANI), and self-assembled layered materials of laponite have been prepared on polyethylene terephthalate (PET) substrates. We have also explored alternative transparent conducting electrode layers for flexible substrates including doped ZnO and CVD deposited conducting polymers. In this presentation, we will explore recent advances in the preparation, processing, and testing of these hybrid photovoltaic devices completed at the new Center for Autonomous Solar Power (CASP) and the Center for Advanced Microelectronics Manufacturing (CAMM) at Binghamton University's Center of Excellence.

### **Speaker Bio:**

Wayne Jones is Professor and Chair in the Department of Chemistry at the State University of New York at Binghamton (Binghamton University). He received his BS from St. Michael's College and his PhD in Inorganic Chemistry from the University of North Carolina at Chapel Hill, working with T. J. Meyer. After 18 months of a post-doctoral fellowship at the University of Texas at Austin, he declined an NIH post-doctoral fellowship to join the faculty at Binghamton University. His research and scholarship has been recognized internationally in the area of molecular wires and devices including recognition as a Fellow of the American Chemical Society in 2010. He has published over 100 research articles, review chapters, and patents in the areas of photoinduced electron and energy transfer in macromolecular systems including molecular wires, electrically and thermally conducting nanomaterials, and photoinduced electron transfer dynamics in organic/inorganic hybrid conducting polymer materials, and fluorescent conjugated polymer sensors. His research efforts have been supported by grants from the NIH, NSF, ACS-PRF and the NNSA as well as several industrial partners. His current collaborations include the Center for Autonomous Solar Power (CASP) and the Center for Advanced Microelectronics Manufacturing (CAMM) in the NY State Center of Excellence at Binghamton.

Recipient of several teaching awards including the State University of New York Chancellor's Award for Excellence in Teaching in 2001, his

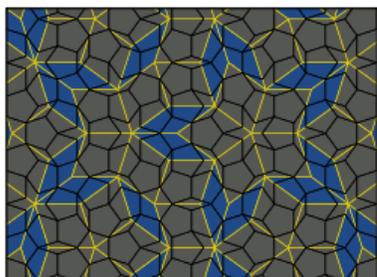
teaching interests involve long-term curriculum development in chemistry, including more expanded use of technology in introductory chemical education, use of interactive multi-media materials for self-directed learning and the design of new advanced undergraduate laboratories based on the guided inquiry approach. In 1996, he was appointed Director of the Center for Learning and Teaching and continues to work with faculty on innovative, student-centered approaches to learning. From 2001-2005, he served as Executive Assistant to the President, working on special projects involving both teaching and research. Since 2008 he has served as the Director of the Go Green Institute, a program designed to inspire middle school students to careers in Science and Engineering. He has worked as an external evaluator on several nationally funded learning initiatives related to nanotechnology and student-centered learning, and served as a reviewer on higher education accreditation teams.

Jones can be reached at the Chemistry Department and Institute of Materials Research, State University of New York at Binghamton, Binghamton, NY, 13902. [wjones@binghamton.edu](mailto:wjones@binghamton.edu)  
<http://www2.binghamton.edu/chemistry/people/jones/jones.html>

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### Chair's Message

On October 5<sup>th</sup>, the Nobel Prize for Chemistry was awarded to **Dr. Daniel Shechtman** of Technion, Israel Institute of Technology in Haifa, Israel. Dr. Shechtman was awarded the Nobel Prize for his discovery of quasicrystals, crystals that do not have a regular repeating pattern. On April 8<sup>th</sup>, 1982 (recorded in his notebook), Dr. Shechtman found that crystals of alumina and manganese exhibited 10-fold symmetry. This was an amazing observation, since 10-fold symmetry was thought to be impossible for crystals that are formed of a regular repeating pattern of atom. He went to show that these atoms were well packed and ordered, but in a pattern that never repeats itself-like Penrose tiling:



It was not easy convincing the scientific establishment – “only through skill, luck, and good old

fashioned tenacity was he able to convince a very skeptical world the veracity of his findings” – Sven Lidin, Member, Nobel Committee.

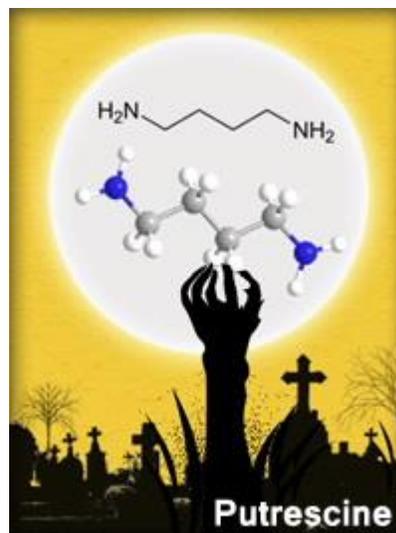
National Chemistry Week (October 16-22) was celebrated with the theme “Chemistry – Our Health, Our Future”. If your school participated in any way, a classroom activity or perhaps a trip, please let me know. Several of our students throughout the Midwest section presented posters at the Midwest Regional meeting, in St. Louis. The Executive Board thought that it would be a good opportunity at this November meeting to showcase some of the outstanding research being carried out throughout the Wichita section. If you or a student presented at the Midwest Regional Meeting, or would like to present a poster at the November meeting, please RSVP to me ([Jim.Bann@wichita.edu](mailto:Jim.Bann@wichita.edu)) by Monday November 7<sup>th</sup>.

**Jim Bann**, Chair, ACS Wichita Section

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### Molecule of the Week

Putrescine (butane-1,4-diamine) and cadaverine (pentane-1,4-diamine) are foul-smelling compounds produced when amino acids decompose in decaying animals. They are also found in small amounts in living cells. Putrescine is formed by the decarboxylation of ornithine and arginine; cadaverine by the decarboxylation of lysine. L. Brieger and O. Bocklisch isolated both compounds in 1885 and A. Ladenburg prepared them soon afterward.



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### Tidbits from the ACS

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#### New Local Section Industry Grant Available

The Committee on Corporation Associates is piloting a new funding program for ACS Local Sections to promote industry focused events at the local section level.

Corporation Associates is soliciting grant proposals from ACS Local Sections for industry-related events next year. Events can range from job fairs with local chemical employers, resume writing workshops, networking receptions, hosted panel discussions with industry leaders and other similar forums to benefit those local section members employed in industry.

Upon review of a well detailed event, Corporation Associates will fund local sections up to \$1,000 to help subsidize the costs associated with producing and hosting these events.

Please note that the deadline for these Local Section grants is December 12, 2011.

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#### Free ACS Webinar

*Advancing Your Career as a Woman in the Pharmaceutical/Chemical Industry*

Speaker: **Dr. Anabella Villalobos**, Neuroscience and Antibody Drug Conjugate Medicinal Chemistry, Worldwide Research and Development, Pfizer

Thursday November 10, 2011 | 2pm-3pm EST

*The Chemical Keys to Thanksgiving Dinner*

Speaker: **Dr. Harold McGee**, scientist and author of a regular column in the New York Times, *The Curious Cook*

Thursday, November 17, 2011 | 2pm-3pm EST

*How to Secure and Nurture a Vibrant Chemistry Career in the 21st Century*

Speaker: **Dr. Brian Fahie**, Eli Lilly

Thursday, December 1, 2011 | 2pm-3pm EST

Additional topics and information can be found at ACSWebinars.org

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#### Wichita Section Web Site:

<http://wichita.sites.acs.org/>

#### 2011 Section Officers:

**Jim Bann**, *Chair*

Department of Chemistry  
Wichita State University  
Wichita, Kansas 76260-0051  
316-978-7373  
[jim.bann@wichita.edu](mailto:jim.bann@wichita.edu)

**Jung Oh**, *Chair Elect*

Department of Arts, Science, and Business  
Kansas State University at Salina  
Salina, KS 67401  
785-826-2915  
[jroh@sal.ksu.edu](mailto:jroh@sal.ksu.edu)

**Malonne Davies**, *Secretary/Treasurer*

Department of Chemistry  
1200 Commercial St., Campus Box 4030  
Emporia State University  
Emporia, KS 66801  
620-341-5958  
[mdavies@emporia.edu](mailto:mdavies@emporia.edu)

**Paul Rillema**, *Councilor (2011 - 2013)*

Department of Chemistry  
Wichita State University  
Wichita, KS 67260-0051  
316-978-3732  
[paul.rillema@wichita.edu](mailto:paul.rillema@wichita.edu)

**Art Landis**, *Alternate Councilor (2011 - 2013)*

Department of Chemistry  
Emporia State University  
Emporia, KS 66801  
620-341-5992  
[alandis@emporia.edu](mailto:alandis@emporia.edu)

#### Executive Committee Members

**Robin Jackson**, *Immediate Past Chair*

Central Christian College  
[robin.jackson@centralchristian.edu](mailto:robin.jackson@centralchristian.edu)

**Stephen Donnelly**, *Newsletter Editor*

Fort Hays State University  
[sdonnell@fhsu.edu](mailto:sdonnell@fhsu.edu)

**Alan Oberley**

Newman University  
[oberleya@newmanu.edu](mailto:oberleya@newmanu.edu)

**Eric Trump**, *Webmaster*

Emporia State University  
[etrump@emporia.edu](mailto:etrump@emporia.edu)

**Tom Wiese**

Fort Hays State University  
[twiese@fhsu.edu](mailto:twiese@fhsu.edu)