

# SEAC *communications*

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**Available on the WWW at <http://electroanalytical.org>**

## Message from the President

This is my last letter as SEAC President. It has been a privilege to serve in this office, especially with the wonderful individuals that volunteer to help with this organization. In particular, I need to thank Jon Howell and Johna Leddy. These two are the ones that really keep this organization running. I was very fortunate that they both agreed to stay on for another term when I became President. I also want to thank Faye Rubinson, Anna Brajter-Toth, and Samuel Kounaves for their work on the SEAC newsletter and web page, which keep us all informed. These are difficult jobs and I appreciate their efforts. There are a number of other individuals who have contributed to SEAC in the last two years as committee chairs or volunteers and I want to thank all of them as well. The list is too long to print here, but you know who you are. Finally, I want to pass the torch to our new President, Dick Durst. Dick has a lot of great ideas, and I am sure he will be a fantastic SEAC President.

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For those of you who did not attend, this year's Pittcon in Chicago was cold and rainy but SEAC activities provided a ray of sunshine for all in attendance. The C.N. Reilley Award Symposium was particularly entertaining this year. Several distinguished lecturers paid tribute to the scientific contributions of the C.N. Reilley Award winner, Charles Martin, including pictures and stories highlighting his second career as a musician. On Tuesday night, the SEAC reception and dinner was held at the Phoenix restaurant. Pictures taken by Faye Rubinson and Jon Howell appear below. SEAC presented five student travel awards this year. We had quite a few excellent applicants and these students should be very proud of their

accomplishment. We also had a SEAC contributed session on electrochemistry this year. This turned out to be very popular, and we had more people wanting to contribute than time available. Next year we hope to have two organized contributed sessions, one related to materials and another to bioanalytical chemistry so that we can fit more members into the session.

Members should be aware that some important decisions that could affect you or your colleagues were made at the SEAC board meeting this year. First, Pittcon has agreed to move the C.N. Reilly Award Symposium from Wednesday afternoon to Monday afternoon. This means that we will be able to have the reception and dinner immediately following the award symposium instead of the night before. The Board felt that this would increase the attendance at all the events. It was also decided in Chicago to change the length of time that an individual is eligible for the SEAC Young Investigator Award. SEAC members will now be eligible up to 10 years after receiving their Ph.D. degree (as opposed to 7 years). This should generate a larger pool of applicants as well as give people who may have taken a less direct career path the opportunity to compete for the award. Please continue to nominate deserving colleagues for this award.

On a final note, please continue to send your electrochemical news to Faye Rubinson for inclusion in the SEAC newsletter. She is doing a great job and is always looking for a new angle.

Thank you for allowing me to be your president. I hope to see you all at the SEAC sessions at Pittcon next year. Have a great summer. Kind regards-Sue Lunte, President

## 2010 Reilley and Young Investigator Awards

The 2010 Charles N Reilley Award in Electroanalytical Chemistry will be presented to Richard M Crooks, William H. Wade Professor and Chairman of the Department of Chemistry at the University of Texas at Austin. Professor Crooks' research interests include integrated microfluidic systems, nanomaterials, catalysis and electrocatalysis, and physical electrochemistry. He is the author of almost 200 publications over his career. The Reilley Award is given in memory of one of the most distinguished analytical chemists of the 20th century and is supported by Bioanalytical Systems, Inc.

The 2010 Young Investigator Awardee is Christy Haynes of the University of Minnesota. Christy's group works at the interfaces of analytical, physical, materials, and biological chemistry, exploiting electrochemical and spectroscopic techniques to achieve dynamic molecular information. The systems she studies range from neurons to soil to nanostructures.

## Pittcon 2009

### Reilley Award Presented to Professor Charles Martin

This year's Reilley Award winner, Professor Charles Martin of University of Florida, was feted (and roasted a bit) at the Reilley Award Symposium this year at Pittcon. The award, presented by Henry White (University of Utah) was followed by Chuck's award address, "[Nano Test Tubes - Synthesis, Capping, Biofunctionalization and Biodegradation](#)", as well as a stellar array (yes, pun intended) of talks including

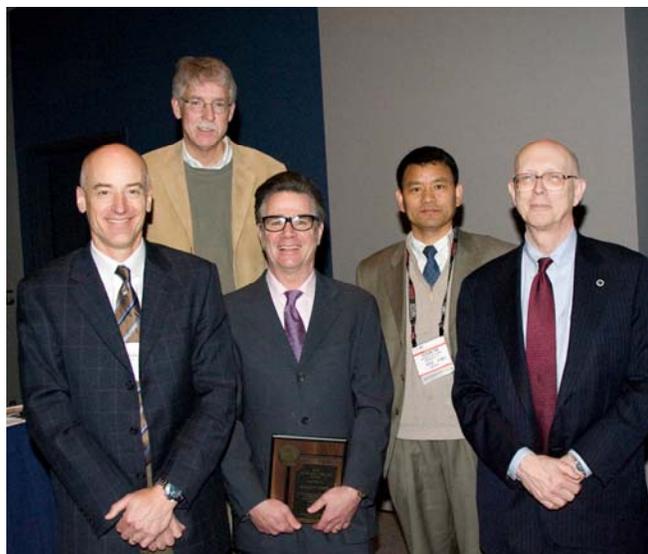
["Unconventional Nanofabrication"](#) (George Whitesides)

["Ingredients: Metal Nanowires and Viruses: A Recipe for a Universal Biosensor,"](#)

Reginald Penner

["Elucidation of the Molecular Foundation of Cancers,"](#) Weihong Tan, and  
[Ion Channel Recordings using Glass Nanopores](#) (Henry White)

Congratulations, Chuck, from all of your colleagues and friends.

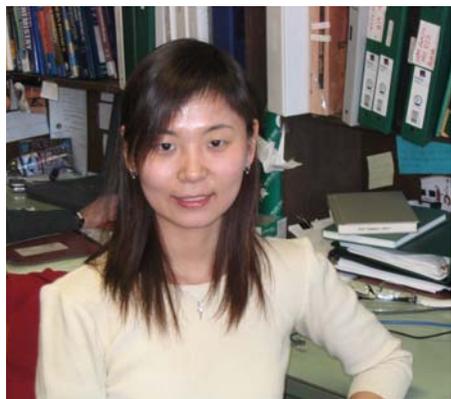


Left: Chuck with SEAC President Sue Lunte. Right: Back row: Henry White and Weihong Tan. Front row: Reg Penner, Chuck and George Whitesides. (©2009 Roy Engelbrecht/The Pittsburgh Conference)

## Graduate Student Travel Awards

Five students were awarded \$500 travel awards to present their research at the recent Pittcon. We all join in congratulating them for their excellent presentations and wish them a long and productive career in electroanalytical research (along all of the possible avenues that might entail).

### Hua Dong



“Differential function of  $\alpha_2$  adrenergic receptors in sympathetic neuroeffector transmission in mesenteric arteries in hypertension”

Hua Dong grew up in Shijiazhuang, P.R. China and earned a B.S. in Chemistry from Xiamen University in 2003. She then moved in 2004 to Michigan State University where her doctoral studies with Greg Swain focus on the electrochemical investigation of neural control mechanisms of arteries and veins, and how these mechanisms are altered in salt-sensitive hypertension. She has measured neurotransmitter norepinephrine release from sympathetic nerves of mesenteric arteries and veins *in vitro* by using continuous amperometry with diamond microelectrodes. By coupling the electrochemical data with video microscopy, it has been possible to image dynamic changes in vascular tone evoked by nerve stimulation.

### Bryce Marquis

“Using Carbon-Fiber Microelectrode Amperometry as an Immunotoxicological Tool”

Brian, who hails from Minneapolis, MN, has been working in Christy Haines' laboratory at the University of Minnesota, utilizing carbon-fiber microelectrode amperometry (CFMA) to examine exocytotic events as a window to immunotoxicity. To date, he has completed work in three sub-projects towards this goal: development and characterization of an immune cell co-culture system that provides the reproducible results and functional stability required for chronic exposure tests; characterization of the immunotoxicity of known toxicant exposure on the model system through correlation with perturbations in amperometrically detected exocytosis, and characterization of the effects on exocytosis of unknown toxicants (engineered nanomaterials) by CFMA.



### Yi Liu

“X-ray Studies of Novel Intermetallic Phases for Fuel Cell Applications”

Yi Liu, a native of Wuhan, Hubei Province, China, obtained his Bachelors and Masters degrees in Chemistry from Wuhan University, and joined Hector Abruña at Cornell University in July 2004. His projects focus on in-situ synchrotron-based X-ray characterization (including Grazing

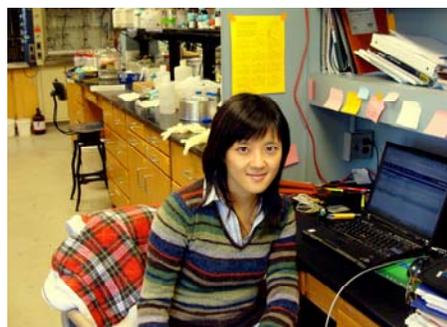


Incidence Diffraction, Extended X-ray Absorption Fine Structure and X-ray Fluorescence Spectroscopy) of ordered intermetallic phases in conjunction with electrochemical performance to explore the surface composition/structure and catalytic activity relationships of these materials in fuel cell applications. He has investigated both polycrystalline, single crystal facets with various orientations and nanoparticles of promising intermetallic phases as electrocatalysts. These investigations and the rationalization of the structure/activity relationships found for these materials will provide valuable guidance for design of new functional materials.

### Lin Wang

“Rapid Detection of High Charge Density Polyanion Contaminants in Biomedical Heparin Preparations Using Potentiometric Polyion Sensors”

Lin Wang comes to Mark Meyerhoff's group at University of Michigan Tianjin, China, having completed her bachelor's degree at the University of Science and Technology of China (USTC) in 2004. She is currently a fifth year graduate student.



This project is related to heparin which is widely used as an injectable anticoagulant. Recently, an acute, rapid onset of serious side effects indicative of an allergic type reaction has been reported in certain lots of heparin. Oversulfated chondroitin sulfate (OSCS) might be the cause for such sudden rise in the side effects. In potentiometric measurement, the equilibrium EMF change of previously reported polyanion sensors should be much greater for the contaminated heparin samples than for the untainted heparin due to the higher charge density of the contaminant. We are trying to apply these polyanion sensors to determine the existence of contaminant in heparin preparation and semi-quantitative determine the contaminant concentration.

### Michael Kurczyk

“Spatially and Temporally Resolved Electrochemical Detection of Neurotransmitter Diffusion through a Model Synapse”



Michael Kurczyk is currently a graduate student with Andy Ewing at Pennsylvania State University. His research involves spatial and temporal mapping of the origin and the fate of individual neurotransmitter release events from single cells in a model synapse using a multi electrode array (MEA). These MEAs, composed of individually addressable 2.5  $\mu\text{m}$ -radius microdisks embedded in glass, as placed against single rat pheochromocytoma cells to create a gap between the cell and the electrode with the approximate dimensions of a chemical synapse.

## Member Reception

The Society returned to The Phoenix Restaurant in Chicago for this year's award Reception and Banquet. Once again the excellent food was made even more enjoyable by the chance to catch up with friends and continue the discussions begun in the meeting rooms.



Sue Lunte and Pete Kissinger



Kathy Ayers and Petr Vanysek



The inimitable Henry White



Above: Chuck Martin and lovely wife, Amy. Right: Mark Meyerhoff, Steve Creager and Reg Penner sample the munchies



Left: Ta Yung Chen and Shellie Minteer. Right: Jeff Long, Reg Penner and Debra Rolison.





Left: Dan Feldheim and Carol Korzienewski. Right: Some of the student guests at the Phoenix, including Anne Regal, Pradyot Nandi, Tom Linz, and Courtney Kuhnline. (OK-the rest of you send me your names and we will reprint this picture in the next issue!).

### **SEAC Board of Directors Meeting**

The Board welcomed new members Shelley Minter, Jon Kirchoff and Philippe Buhlmann. In other business,

- Our Membership chair, reported that membership has continued to show a slow but steady increase over the last few years. There is a great deal of interest in attracting younger members and a young electrochemist liaison effort is in the works.
  - Finances continue to be strong, even in the current economic environment.
  - Based on the fact that increasing numbers of new PhDs carry out longer postdocs or experience a lapse due to family leave during the period after completing their studies, the years-post-award criterion for nominations for the Young Investigator Award has been extended to 10 years past the awarding of the PhD.
  - SEAC's cooperative agreement with the International Society of Electrochemistry will become official with a signing ceremony at the ISE fall meeting.

### **Congratulations are in order for Royce Murray!**

Royce W. Murray, Kenan Professor of Chemistry at the University of North Carolina at Chapel Hill has been named the recipient of the 2008 Southern Chemist Award. The award, sponsored by the Memphis, TN, local section of the American Chemical Society, acknowledges outstanding achievement in chemistry and contributions to the field that have brought recognition to the South. Murray is recognized internationally for his contributions to electrochemistry. He introduced the concept of chemically modified electrodes, tools that are important as chemical sensors, fuel cells and in solar energy conversion. His contributions have had a major impact in fields ranging from renewable energy to medical sensing technology. Royce arrived at UNC's College of Arts and Sciences in 1960 as an instructor just weeks after earning his Ph.D. in chemistry from Northwestern University, accomplished in only three years. A former chemistry department chair, he has garnered countless awards; in 2001 he won both the university's Thomas Jefferson Award and the governor's North Carolina Award in Science. He is also a member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and editor-in-chief of the journal Analytical Chemistry. During his 48-year career at Carolina, Murray has mentored about 140 graduate

and postgraduate students, published more than 450 research articles, nearly 200 editorials, four books, and holds four patents. (*Notice courtesy of UNC News Service*).

### ... and Reg Penner



Reg Penner has recently been awarded the Faraday Medal. The Faraday Medal is currently awarded annually by the Electrochemistry Group of the RSC (Royal Society of Chemistry) to an electrochemist working outside the UK in recognition of their outstanding original contributions and innovation in any field of electrochemistry. The medal was first awarded in 1977 to V G Levich and further medallists include J M Savéant, H Gerischer, A Heller, A M Bond, D Scherson, R M Wightman, H H Girault, C Amatore, and in 2008 N. Lewis.

Reg is shown above in “non-electrochemistry” mode with Dick Crooks and John McDevitt after a recent Capitol 10 K in Austin. (And they say electrochemists only move electrons!)

### Kudos to Jeff Long and Debra Rolison

SEAC members Jeff Long and Debra Rolison of the *Naval Research Laboratory, Washington, DC* were recently recognized by the ACS Division of Polymeric Materials Science and Engineering with an Arthur K. Doolittle award for their paper, “Self-limiting electropolymerization en route to ultrathin conformal polymer coatings for energy storage applications”, which Jeff presented at the 2008 Fall ACS meeting in Philadelphia. Co-authors on the paper were Todd McEvoy, Anne Fischer, Justin Lytle, and Megan Bourg. The Doolittle Award recognizes “the meeting’s *best paper as selected* from papers nominated, based on scientific content, significance to the field, mechanics of presentation, and the quality of the preprint.”

### ..and even more kudos for Debra Rolison

Debra Rolison, former Editor of *SEAC Communications* and Head of the Advanced Electrochemical Materials Section at the U.S. Naval Research Lab, Washington, DC, has been admitted into the inaugural class of Fellows of the Materials Research Society. The MRS created their Fellows’ program in 2008 to recognize outstanding members of the society whose sustained and distinguished contributions to the advancement of materials research are internationally recognized. Rolison was honored for developing a class of multifunctional ultraporous materials to address key requirements in future battery, fuel cell, and sensing technologies and for fundamental studies of structure–property relationships in nanostructured materials. She is seen at right



with Tito Abruña celebrating over calimari and café con leche last autumn in Sevilla (photo courtesy of “Horseshoe” Henry White). Hmm... could Tito’s 1 July 2008 release from duties as Chair of Cornell’s Department of Chemistry possibly be contributing to his happy glow?

## New Members!

### New Student Members

Rachel Behrens, University of Illinois  
 Maks Derylo, Indiana University  
 Hua Dong, Michigan State University  
 Michael Kurczyk, Penn State University  
 Yi Liu, Cornell University  
 Leyda Lugo-Morales, North Carolina State University  
 Bryce Marquis, University of Minnesota  
 James G. Roberts, North Carolina State University  
 Bryan Tienes, University of Colorado  
 Lin Wang, University of Michigan

Rashid Zakeri, Indiana University

### New Regular Members

Christy Haynes, University of Minnesota  
 Robert Ianniello, BASF Catalysts LLC  
 Gangli Wang, Georgia State University

### New Lifetime Members

Howard Dewald, Ohio University  
 Charles Goss, GSK  
 Carol Korzeniewski, Texas Technical University

## Goings and Comings

G'day! Dr. Mark Imisides is now Chief Chemist at Rowe Scientific in Wangara (Australia).

## SEAC WANTS YOU (and your students and colleagues and..)

If you have colleagues, students or electrochemist friends who might be interested in SEAC membership, please pass on the following link to the Membership application: <http://electroanalytical.org/memberform.html>.

## Publication Schedule for 2009-2010 for the SEAC Newsletter

	Copy due to Faye	Draft to Chair (for “Letter from Chair”)	Anticipated Publication	Primary news target
2009	July 15	July 22	August 1	<ul style="list-style-type: none"> <li>• Profiles of Award Winners</li> </ul>
	October 15	October 22	November 1	<ul style="list-style-type: none"> <li>• Announcement of candidates for Board and Officers</li> </ul>
2010	January 15	January 22	February 1	<ul style="list-style-type: none"> <li>• Pittcon Events</li> <li>• Announcement of Election results</li> </ul>
	April 15	April 22	May 1	<ul style="list-style-type: none"> <li>• Wrap-up of Pittcon '10</li> <li>• Announcement of '11 Awardees</li> </ul>

Issues will also continue to report member news, meetings of interest (both since the last issue and upcoming). We also would like to begin to include an editorial or focus article from a member in each issue.

## SEAC WEB Page Updates?

The Web page is now undergoing an update. Please send any needed updates to information, new external links, or a note about extinct ones to Faye Rubinson at [jfr@georgetown.edu](mailto:jfr@georgetown.edu).

## Upcoming Meetings

Meeting	When	Where	Link for More in formation
Biophysics and Bioelectrochemistry for Medicine	6-9 May, 2009	Cisnadioara, Romania	<a href="http://www.biophysicsnet.ro">www.biophysicsnet.ro</a>
XXth Symposium of the International Society of Bioelectrochemistry	10-14 May 2009	Sibiu, Romania	<a href="http://www.bes2009.ro">http://www.bes2009.ro</a>
2nd International Symposium on Surface Imaging/Spectroscopy at the Solid/Liquid Interface	31 May - 3 June 2009	Cracow, Poland	<a href="http://atom.ik-pan.krakow.pl/konfer/spec2009/">http://atom.ik-pan.krakow.pl/konfer/spec2009/</a>
Electrochemistry in Functional Molecules and Materials	7-10 June 2009	Tübingen, Germany	<a href="http://www.echem.uni-tuebingen.de/echems5">http://www.echem.uni-tuebingen.de/echems5</a>
First International Symposium on Enhanced Electrochemical Capacitors	29 June - 2 July 2009	Nantes, France	<a href="http://www.iseecap09.org">www.iseecap09.org</a>
Journées d'Électrochimie 2009	6-10 July 2009	Sinaia, Romania	<a href="http://www.je09.org">http://www.je09.org</a>
International Workshop on Electrochemistry of Electroactive Materials	14-19 July 2009	Szczyrk, Poland	<a href="http://www.chem.uw.edu.pl/weem2009">http://www.chem.uw.edu.pl/weem2009</a>
4th International Conference on Polymer Batteries and Fuel Cells	2-6 August 2009	Yokohama, Japan	<a href="http://www.pac.ne.jp/PBFC2009/">http://www.pac.ne.jp/PBFC2009/</a>
42nd IUPAC Congress: Chemistry Solutions	2-7 August 2009	Glasgow, UK	<a href="http://www.iupac2009.org">www.iupac2009.org</a>
International Symposium on Frontiers of Electrochemical Science and Technology	12-15 August 2009	Xi'an, China	<a href="http://www.chem.snnu.edu.cn/FEST2009">http://www.chem.snnu.edu.cn/FEST2009</a>
International Symposium on Electrochemistry for Energy Conversion and Storage	22-25 August 2009	Wuhan-Three Gorges, China	<a href="http://www.electrochem.whu.edu.cn/3gorges2009">www.electrochem.whu.edu.cn/3gorges2009</a>
International Symposium on Nanoelectrochemistry and	23-26 August	Xiamen,	<a href="http://210.34.15.15/isexiamen">http://210.34.15.15/isexiamen</a>

<b>Meeting</b>	<b>When</b>	<b>Where</b>	<b>Link for More in formation</b>
Spectroelectrochemistry	2009	China	
EUROCORR'2009	6-10 September 2009	Nice, France	<a href="http://eurocorr.org/EUROCORR+2009.html">http://eurocorr.org/EUROCORR+2009.html</a>
5th European Summer School on Electrochemical Engineering	6-11 September 2009	Almagro, Ciudad Real, Spain	<a href="http://www.uclm.es/dep/diq/essee5">www.uclm.es/dep/diq/essee5</a>
Electrochem 2009	16-17 September 2009	Manchester, UK	<a href="http://www.meeting.co.uk/confercare/electrochem09/">http://www.meeting.co.uk/confercare/electrochem09/</a>
8th Electrochemistry Meeting in Turkey	8-11 October 2009	Antalya, Turkey	<a href="http://www.elektrokimya.org/">http://www.elektrokimya.org/</a>
The 4th International Workshop on Surface Modification for Chemical and Biochemical Sensing, SMCBS'2009	6-10 November 2009	Przegorzaly, Poland	
10th International Symposium on Kinetics in Analytical Chemistry	2-4 December 2009	Cape Town, South Africa	<a href="http://associated.sun.ac.za/UWC/KAC2009/img/KAC/">http://associated.sun.ac.za/UWC/KAC2009/img/KAC/</a>
9th International Frumkin Symposium "Electrochemical Technologies and Materials for 21st Century"	24-29 October 2010	Moscow, Russia	<a href="http://www.elchem.ac.ru">http://www.elchem.ac.ru</a>
The Federation of Analytical Chemistry and Spectroscopy Societies Annual Conference	18-22 October 2009	Louisville, KY	<a href="http://www.facss.org">www.facss.org</a>