European Section Names Allen J. Bard as 2007 Gerischer Award Recipient

ALLEN J. BARD has been selected to receive the 2007 Gerischer Award of the ECS European Section; he will receive the award the upcoming ECS spring meeting in Chicago (May 6-11, 2006). Prof. Bard was born in New York City on December 18, 1933; he grew up and attended public schools there, including the Bronx High School of Science (1948-51). He attended The City College of the College of New York (CCNY) (BS, 1955) and Harvard University (MA, 1956; PhD, 1958).

Prof. Bard joined the faculty at The University of Texas at Austin (UT) in 1958, and has spent his entire career there. He has been the Hackerman-Welch Regents Chair in Chemistry at UT since 1985. He spent a sabbatical in the CNRS lab of Jean-Michel Savéant in Paris in 1973 and a semester in 1977 at the California Institute of Technology, where he was a Sherman Mills Fairchild Scholar. He was also a Baker lecturer at Cornell University in the spring of 1987 and the Robert Burns Woodward visiting professor at Harvard University in 1988.

Bard has worked as mentor to and collaborator with 78 PhD students, 17 MS students, 150 postdoctoral associates, and numerous visiting scientists. He has published over 790 peer-reviewed research papers and 75 book chapters and other publications, and has received over 23 patents. He has authored three books, *Chemical Equilibrium* (1966), *Electrochemical Methods—Fundamentals and Applications* (1980, 2nd Ed., 2001, with L. R. Faulkner), and *Integrated Chemical Systems: A Chemical Approach to Nanotechnology* (1994). He served as Editor-in-Chief of the *Journal of the American Chemical Society* 1982-2001. His research interests involve the application of electrochemical methods to the study of chemical problems and include investigations in scanning electrochemical microscopy, electrogenerated chemiluminescence, and photoelectrochemistry.

Detroit

The most recent ECS Detroit Section meeting was held January 31 at Lawrence Technological University in Southfield, MI. The meeting featured a seminar talk by Susan Babinec of The Dow Chemical Company (Midland, MI) on "Cathode Structure Property Relationships: Electrochemistry & Mechanics." Dr. Babinec discussed her group's study of cathode electrodes for lithium ion batteries. Dr. Babinec is investigating the impact on electrochemical and mechanical properties of varying the levels of an electrode's binder and porosity. This subject raised many questions from an interested audience, which Dr. Babinec was gracious enough to address.

This seminar was the third meeting of the year for the Detroit Section. On September 19, 2006, the Section hosted Dr. Gholam-Abbas Nazri from General Motors Research and Development who spoke on the "Materials Aspect of Lithium Batteries in Transportation Applications." On October 30, Prof. Linda Nazar of the University of Waterloo gave a talk on "The New Generation of Cathode Materials for Advanced Lithium Battery for Transportation Applications." To date, the Detroit Section has welcomed a total of over eighty attendees to its meetings this year.

San Francisco

The San Francisco Section had a meeting on December 12, 2006. Professor Liwei Lin, of the Mechanical Engineering Department at UC Berkeley, discussed his work in the context of a micro/nano system "revolution." He demonstrated how the major disciplines in mechanical engineering, including thermal, solid, dynamics, fluid, bio, and optics, have contributed to this revolution, in which the application of microelectronic technology to the fabrication of mechanical devices has stimulated new directions for research in micro/nano sensors and actuators. Professor Lin discussed several design and manufacturing innovations that have been enabled via the development of various microfabrication processes, including surface-micromachining, bulk-micromachining, and plastic molding of hot embossing and injection molding. His current research topics include bionic power generation, nanocomposite MEMS, integrated mm-wave sensing systems, plastically deformed micro-mirrors, navigation grade micro gyroscopes, and integrated nanoelectromechanical systems.

Pittsburgh

On October 27 and 28, 2006, the Pittsburgh Section joined the National Chemistry Week (NCW) activities at the Carnegie Science Center in Pittsburgh, PA, for two days. By official count, 3,655 people attended the event, while local businesses funded the attendance of over 1,000 elementary and secondary school students from southwestern Pennsylvania. Posters and literature at the Pittsburgh Section table (see photos) connected to the "Chemistry Around the Home" theme by showing that many familiar household events are electrochemical in nature. Staffed by Wenfeng Peng, Bill Hoffman, Raphael and Janni Morales, and Beth Tomasovic, topics at the table included galvanic corrosion of dissimilar metals and the reactions that power batteries.

The most popular exhibit was a demonstration of the galvanic series using a saline agar gel that contained a green pH indicator. Two dissimilar metals (aluminum and copper strips in the photos) were connected together at one end. A thin (~2 mm) slice of the green agar gel bridged the free ends of the metal strips. Aluminum corrodes according to $Al \rightarrow Al\ (+3) + 3e^-$, and the aluminum ions react with water by $Al\ (3+) + 3H_2O \rightarrow Al(OH)_3 + 3H^+$. These acidic hydrogen ions turn the gel red around the aluminum. The electrons liberated from the aluminum flow through the wire to the copper strip, where oxygen is reduced by $O_2 + 2H_2O + 4e^- \rightarrow 4OH^-$. These basic hydroxide ions turn the gel blue around the copper.

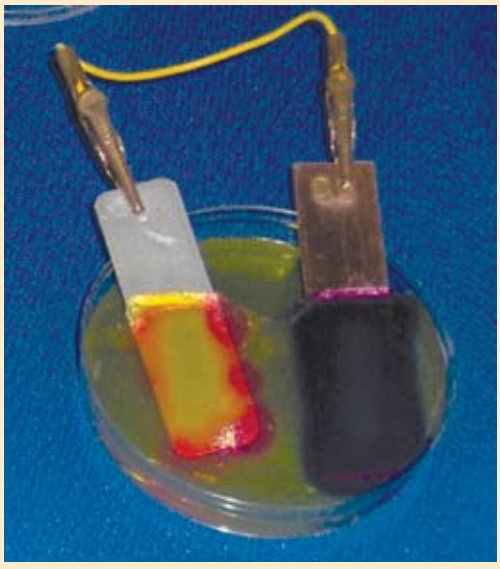
The students were provided with disposable gloves, a chart of the galvanic series of common metals in seawater, and some polished metal strips inclu ding Mg, Zn, Al, Fe, Cu, and Ni. They were invited to predict, for any pair of metals, which would turn the gel blue and which red. It soon became clear that an accurate prediction could only be made if the metals were widely

separated on the chart. "Nearby" pairings such as copper and nickel sometimes gave contradictory behavior in repeated trials—a great introduction to the real-world problem of interpreting experimental results!

Copies of *Interface*, "What Is Electrochemistry," and other ECS literature were offered to the most interested and active visitors to our table. The 2006 NCW event was a huge success, with 278 volunteers representing 27 different organizations making for a fascinating display of "Chemistry Around the Home." Thanks to Wenpeng Feng, ECS Pittsburgh Section, and Michael Mautino, NCW staff, for the photos. "The Many Faces of Chemistry" is the theme for NCW 2007, and the Pittsburgh Section is making plans to participate. ■

Scenes from the Pittsburgh Section at National Chemistry Week

The **ECS Pittsburgh Section** *participated in the National Chemistry Week activities at the Carnegie Science Center in Pittsburgh, PA. Here, students gather at the Section's table, staffed by Beth Tomasovic and Raff Morales.*



A close-up of the demonstration with aluminum and copper.

Bill Hoffman simplifies the student's explanation of the demonstration into terms the parent can understand!

One of two ECS Pittsburgh Section posters at the 2006 National Chemistry Week event.