

National Capital

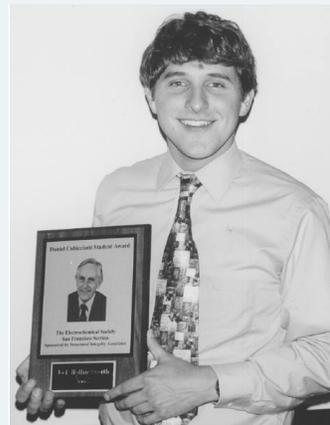
The Section met on May 6 in Alexandria, Virginia for the annual Awards Night Banquet. The occasion celebrates both past achievements and future aspirations. Edward McCafferty, guest of honor and speaker for the night, received the Section's 2003 Foley Award. The award is presented in recognition of individuals who have made important contributions to the science or technology of electrochemistry through excellence in teaching or administration of electrochemical or solid-state technology, or through service to The Electrochemical Society at the local or national level. The award is directed toward a member who resides within the area of the National Capital Section. Dr. McCafferty discussed two examples of his research: (1) corrosion resistant surface alloys prepared by laser processing, and (2) graph theory and the passivity of binary alloys.

This year's science fair judges were: Guy Davis, Rengaswamy "Sri" Srinivasan, David Schifler, Maggie Teliska, and Steve Lawrence (science fair chair for 2003). The first prize winners were: DAVID GERMAIN, Winston Churchill High School, *Enhancing the Magnetocaloric Effect of Superparamagnetic Nanocomposites for Magnetic Refrigeration*; SICONG ("SILVIA") HOU, Richard Montgomery High School, *Milestones in Fabricating Homogeneously Sized Zinc-Oxide Semiconductor Nanoparticles*; TYLER HOCKMAN, Middletown High School, *DNA Methylation Change in Sperm DNA as a Result of Chromium(III) Exposure: Possible Role in Transgenerational Carcinogenesis*; MITALI THAKOR, River Hill High School, *Nanowires as a Tool for Myocyte Manipulation*; WEN WANG, Mt. Hebron High School, *Electrodeposition of Cobalt Nanowires: Fabrication of Substrates for Carbon Nanotubes*; ALHAJI CHERIF, Parkdale High School, *Electrochemical Cell Method Development*; and JARED KOBULNICKY, Potomac High School, *The Effect of Various pH Solutions Representing Bodily Fluids on the Permeability of Protective Gloves*. Congratulations to all!

New England

The Section met jointly with the Tufts University Chemistry Department on May 13 in Medford, Massachusetts.

2003 Cubicciotti Student Award



Joel Hollingsworth received the 2003 Cubicciotti Student Award.

On May 7, the San Francisco Section held a Student Night Meeting in Berkeley, California, which featured the presentation of the 2003 Cubicciotti Student Award to Joel Hollingsworth of the Department of Materials Science and Engineering, UC Berkeley. The award was presented by Barry Gordon, a representative of Structural Integrity Associates.

The Daniel Cubicciotti Student Award is to honor the memory of Dr. Daniel Cubicciotti, for his dedication and expertise in the application of electrochemical principles to the understanding and control of materials deterioration in nuclear power plants. The award is presented annually and consists of an etched metal plaque and a check for \$2,000 intended to assist with the educational expenses of the recipient. The primary objective of the award is to assist a deserving student in Northern California to pursue a career in the physical sciences or engineering. The award is presented to a student selected for academic excellence, a demonstrated interest in the study or application of electrochemistry, and personal characteristics that reflect Dan Cubicciotti's integrity and *joie de vivre*.

Joel Hollingsworth delivered a talk entitled, "Manganese Oxides for Lithium-Ion Batteries." New lithium ion battery technologies could facilitate the production of electric and hybrid electric vehicles with improved performance. The work focuses on replacing the cobalt-based cathode in traditional lithium ion batteries with materials more suited to the economic and ecological concerns that arise in such high-volume applications. His group studied several manganese-based compounds, including the spinel structure and several metastable phases obtained by ion exchange. Good performance from the spinel studied proved difficult to obtain, but several of the metastable materials performed well, even after repeated cycling. Some of these materials could one day enable affordable and environmentally benign storage batteries for fuel efficient transportation. ■

Allen Bard, of the University of Texas at Austin, hosted the evening and gave a presentation entitled "Applications of Scanning Electrochemical Microscopy in High Resolution Investigations of Interfaces." The talk referred to the use of SECM techniques to characterize sur-

face structures with micrometer and nanometer resolution as well as studying the release of chemical species from a surface. From these observations one can obtain kinetic information about surface processes or reactions in solution and the role of catalysts in these reactions. ■

Council of Section Officers



CHRISTINA BOCK, chairman of the Council, is a Research Scientist at the National Research Council of Canada, Ottawa, where she has been on staff since 1997. She received a BS in chemistry/chemical engineering from the Technikum Winterthur, Switzerland in 1991, where she subsequently spent one year teaching and supervising laboratories in the physical chemistry department. She then obtained a PhD in physical and analytical chemistry at the University of Calgary, Canada in 1997.

Dr. Bock's research interests are directed toward electrocatalysis, in particular oxidation of organics for waste water treatment and direct methanol fuel cells. She is involved with industrial as well as fundamental projects, and has been active in identifying anode catalysts for the oxidation of organic toxins and fuels. As well as electrochemical techniques, she has used techniques such as XPS, Auger, TEM, and ellipsometry in her research.

Dr. Bock has been serving on the executive committee of the ECS Canadian Section since 1998 and is currently past chairman. She organized a one day symposium on "Energy and the Environment" for the Canadian Section at the National Research Council Canada in the fall of 2000.



DAVE SHIFLER, vice-chairman of the Council, has 30 years experience in materials research, materials testing, and failure analyses. He is a Materials Engineer of the Marine Corrosion Branch at NSWCCD where he is involved in high-temperature materials evaluation and the effects of environment for waste incinerators and marine gas turbine engines, corrosion engineering assessments of design for various ship systems, and testing of materials and processes for corrosion control in marine aqueous environments.

Dr. Shifler directed a metallurgical laboratory and performed numerous failure analyses of structural components in high temperature, marine, freshwater, soil, microbiological, and atmospheric environments. He designed and conducted electrochemical and analytical tests to assess factors related to passivity and breakdown of passivity of alloys in aprotic nonaqueous solvents during which he co-discovered electropolymerization as a passivating mechanism.

Dr. Shifler has a BA in chemistry from Western Maryland College and MSE and PhD degrees in materials science and engineering from Johns Hopkins University. He is a certified NACE International Materials Selection/Design Specialist and Corrosion Specialist, a registered professional engineer (Metallurgical Engineering), and a Fellow of the Institute of Corrosion (UK) and a Fellow of NACE International.

Dr. Shifler serves in various capacities in NACE International (Trustee of the Baltimore/Washington Section, chair of the Exam Review Committee, chair and review of various technical symposia); The Electrochemical Society (ECS) (chair, councilor, and individual membership chair for the National Capital Section, co-organizer for technical symposia for high temperature and marine symposia, and is currently working on an update of Frank LaQue's book on

Marine Corrosion); The Minerals, Metals, and Materials Society (TMS) (vice-chair of the Professional Registration Committee); and ASTM International (voting member of corrosion-related committees and subcommittees of new and revised standards).

Dr. Shifler is a technical reviewer for ECS (*Journal of The Electrochemical Society*), NACE International (*Corrosion and Materials Performance*), other technical journals (*Electrochimica Acta*, *Oxidation of Metals*, *Journal of Materials Research*) and various symposia sponsored by NACE International, The Electrochemical Society, and ASME (International Gas Turbine Institute). He is also a member of ASM International, American Society of Naval Engineers (ASNE), International Metallographic Society (IMS), Materials Research Society (MRS), Microscopy Society of America (MSA), The Institute of Corrosion (UK), American Chemical Society (ACS), ASME International, NSPE, and Sigma Xi.



DON GERVASIO, secretary of the Council, is presently an Associate Research Professor at the Center for Applied Nano-BioScience at Arizona State University. Dr. Gervasio studied chemistry at Pennsylvania State University (BS) and at Case Western Reserve University (MS and PhD) with main emphasis on the syntheses

of organometallic and coordination compounds which are redox and often catalytically active. Dr. Gervasio has interest in synthesis, spectroscopy, physical electrochemistry, catalysis, and power sources. Prior academic appointments include Senior Research Associate at the Case Center for Electrochemical Sciences (CCES, now the Yeager Center, YCES) from 1984 to 1993 where he was the lead participant in the study of ion conduction, adsorption, gas solubility, and stability of liquid and solid acid electrolytes for making improved fuel cells. Other involvements included research on: the mechanisms and catalyses of electrochemical reactions; hydrogen absorption and permeation in metals; electrochemical sensors and biosensors; and the corrosion of materials, particularly the debonding of protective coatings under cathodic protection.

Dr. Gervasio was an Instructor at Case Western (1984) and Lecturer at Cleveland State University (1987). In July of 1993, he joined the Red Bank Research Company, a joint venture of Motorola and Bellcore (now Telcordia), in order to develop new membrane and catalyst materials for a mixed-fuel-oxidant-fed, thin film fuel cell (TFFC). During this time, the TFFC was developed from a laboratory curiosity to a device showing potential for commercialization. From December of 1997 to March of 2003, Dr. Gervasio worked at Motorola Labs located in Tempe, AZ to work on fuel cells as long lived electrical power supplies for personal portable applications. In March 2003, he joined Arizona State University and continues to work on fuel cells for portable power and catalysts used in fuel cells, sensors and micro chemical reactors.

Dr. Gervasio is the author of over 30 papers in peer-reviewed publications, has five patents under submission and has often been an invited speaker at universities, technical societies, and community groups. He is currently chairman of the Arizona Section.