

SEAC *communications*

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President's Message

—Electroanalytical Chemistry in the Field;
Thanks to Debra for a Job Well Done!—

When beginning the subject of modern electroanalytical chemistry in my undergraduate instrumental analysis course, I always spend a short time at the very start extolling the virtues of electrochemical methods *vs* a host of other analytical techniques that we cover over the 14-week term. I mention the ability to make measurements in very small volumes, including within single living cells with microelectrodes. I talk about the potential to do elemental speciation (*e.g.*, Fe(III) *vs* Fe(II)) that is not possible by atomic spectroscopy. I discuss how electrodes can distinguish free activity *vs* total concentration and how important this is clinically in the measurement of ionized, not total, calcium species in blood. I emphasize how the output signal of most electrochemical methods is insensitive to the color or turbidity of the test sample.

My enthusiasm reaches a peak, however, when I talk about the relative simplicity and low cost of the instrumentation required to make useful electrochemical measurements and how such instrumentation and associated electrodes can be miniaturized to design highly portable analytical test systems for in the field measurements. Indeed, whether for environmental monitoring at the shoreline of a lake or river, within or online monitoring of bioreactors growing valuable recombinant therapeutic products, or for clinical monitoring of important species in undiluted blood, electrochemical techniques are well suited for field measurements.

Moving electroanalytical chemistry outside the domain of the laboratory continues to grow at an extraordinarily rapid rate. Nowhere is this more evident than in the biomedical field. A large fraction of the single-use home glucose monitors for diabetic patients are now based on mediator-type enzyme electrode technology. Similarly, the first generation of implantable glucose sensors for continuous *in vivo* monitoring of blood glucose levels are tiny electrochemical devices. A very large number of all blood-gas (pH, P_{CO_2} , P_{O_2}) and electrolyte (Na^+ , K^+ , Ca^{2+} , Cl^-) measurements are now made at the patient's bedside in the hospital using modern, compact, electrode-based point-of-care analyzers. The ability to

detect lead poisoning of young children is now possible using highly portable stripping analysis systems equipped with disposable electrochemical cells that measure total lead concentration in samples of whole blood.

For environmental and industrial monitoring, portable electrochemical methods have played an important role for many years. Field-deployable products for monitoring pH, dissolved oxygen, and total dissolved solids (by conductivity) in various types of water samples are marketed by several companies. Small modules containing an array of electrochemical sensors (both potentiometric and voltammetric) are even being developed for NASA for eventual deployment in future unmanned missions to the planet Mars. Once there, surface layers of soil on the planet will be suspended in solution, and signals from an array of sensors will be recorded to help analyze the ion content of the soil, with minimal power requirements. Arrays of thin conducting polymer films are now being exploited within portable "electronic noses", where specific gases are measured from a pattern recognition analysis of conductivities.

While touring the exhibits at the upcoming Pittcon in New Orleans, you will surely see an ever increasing number of companies that have electroanalytical-based products that are field deployable. For those of us in academics, collecting literature on such systems and passing it on to our students is just one way to further educate them about the importance that electroanalytical chemistry is playing in our society. Hopefully this will motivate them to learn the underlying principles of the various electroanalytical methods, and maybe even someday to pursue a career devoted to the study, development and application of new electroanalytical instrumentation and techniques.

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On a separate topic, I want to inform all of you that this SEAC newsletter represents the last one that our beloved editor, **Debra Rolison**, will put together. After 5 years of superb editorial work on a fabulous series of "hot electron" newsletters, Debra is retiring from this responsibility. She has given much to our organization through her dedication and desire to put out an informative and entertaining document 3–4 times a year. This is no easy task. The newsletter has grown in

size and scope under her leadership, and she was one of the principal forces for converting the newsletter (along with our Webmaster—**Sam Kounaves**) into an electronic-version-only document. Indeed the newsletter and website have become the primary means to disseminate information about the society, our field, and the activities of our friends and colleagues. So on behalf of all SEAC members, I want to thank Debra for a job well done!

At the same time, I am very pleased to announce that **Anna Brajter-Toth**, of the University of Florida, will assume the editorship of our newsletter, effective immediately. Anna is a past member of the SEAC Board of Directors and is well known for her contributions in the area of electroanalytical chemistry. I ask that you help make Anna's job a bit easier by sending her any information you think our SEAC members will be interested in, including announcements of faculty and postdoctoral positions, interesting (but not necessarily understood!) electroanalytical observations in the lab, new electroanalytical experiments for laboratory courses, information about yourself, old pictures of electroanalytical chemists, etc. You can send Anna information directly by email at [atoth@chem.ufl.edu](mailto:atoth@chem.ufl.edu).

Mark E. Meyerhoff

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## Editorial

With this issue, I bid the Surfin' SEAC community a deeply fond adieu as Your Editor.

It has been a genuine pleasure to work together with the SEAC community as we explored new ways in which the Society for Electroanalytical Chemistry could remain vital and serve (and amuse) the worldwide community of electron—and ion—lovers. So, my warm thanks to the membership; SEAC's glorious Webmeister, **Sam Kounaves**; the Officers and Directors (past and present) of SEAC; and a quartet of Presidents—**Rick McCreery, Mark Wightman, Steve Weber, and Mark Meyerhoff**. I'm sure it's completely a coincidence that I'm getting out of Dodge before El Prez-Elect **Henry White** assumes office in July 2003...

I'm delighted that SEAC can begin a new Editorial era under the leadership of **Anna Brajter-Toth**. Anna—you will find the job both interesting and a pleasure as you interact over the years with the SEAC membership.

I'm bequeathing a year's worth of *SEAC Communication* to Anna as Word files, so she can see not only what went where, but more importantly, she can track the ebb-and-flow of certain features and information that appear at specific times of the year. But I have strongly encouraged Anna to change the current style of the newsletter as she wishes—and I strongly encourage the SEAC community to discuss with Anna any changes to what-was (under Your (Now-Ex) Editor) and to propose new features. No reason why the newsletter should tromp along in past footsteps.

I expect Anna will find what all SEAC editors find—most of the time, *hélas*, copy must be beaten out of the membership (*i.e.*, recruited with gentle, but ever-so-persistent nudges).

So—change that pattern of abuse!! Please send Anna those SEAC-sumptuous tidbits, irreproducible phenomena, and photographs of “Electrochemists-in-Action”!!

After all: The Queen is dead; long live the Queen!!!

With my best regards to you all, I remain,  
your faithful Ex-Editor,

Debra Rolison

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## Plan your attendance accordingly!

### Pittsburgh Conference—17–22 March 2002, New Orleans, LA

#### *Congratulations to the 2002 SEAC Award Winners!*

The Charles N. Reilley Award for 2002 will be presented to Professor **Christian Amatore**, Director of the Département de Chimie at École Normale Supérieure, Paris and the 2002 Young Investigator Award will be presented to Professor **Andrew Hillier** of the Department of Chemical Engineering at the University of Virginia. Please refer to *SEAC Communications*, **2001**, 17(2) for their research biographies. The Reilley Symposium in their honor has been arranged by Professor **R. Mark Wightman** of the University of North Carolina at Chapel Hill and will be held on Wednesday morning, 20 March 2002, in Rooms 275–277 of the Morial Convention Center.

Immediately following the Reilley Award symposium, the annual meeting of the SEAC membership will be held in the same room. Please plan to stay for this brief business meeting that is required of all tax-exempt organizations. Prospective members and guests are welcome to attend the business meeting.

*The Reception for Reilley Awardee Christian Amatore and Young Investigator Andy Hillier will be held on Monday, 18 March from 5:00 to 7:00 p.m. in the Bacchus A&B of the Wyndham Riverfront Hotel. The reception is open to all. Reservations are not necessary. Hors d'oeuvres will be provided with a cash bar.*

The Reilley Award dinner in honor of Professors Amatore and Hillier will also be held Monday evening, 18 March 2002, from 7:30 p.m.–??? at Carmelo Ristorante, 541 Decatur Street (in the French Quarter, near Jackson Square) immediately following the SEAC Reception.

THE DINNER IS OPEN TO MEMBERS AND GUESTS, BUT ADVANCED RESERVATIONS ARE REQUIRED.

For reservations, please contact SEAC Activities Chair, **Craig Bruntlett** of Bioanalytical Systems, Inc. by telephone: 765-497-5806; Fax: 765-497-1102; or (preferably) electronic mail: [craig\(at\)bioanalytical.com](mailto:craig(at)bioanalytical.com) We will be ordering from the menu and averaging the cost—drinks are separate. In the past, the price was in the \$55 range. Payment will be due to Craig at the conclusion of dinner by check or cash.

—*For more on Christian, check out:* <http://www.chem.unc.edu/faculty/rpb/cfrpb01.html>; *for Andy:* <http://www.chimie.ens.fr/> ... *and to check out PITCON®2002:* <http://www.pittcon.org>—

... **Just in from the 2002 SEAC Young Investigator...** Thu, 28 Feb 2002 08:40 –0500:

Debra—Unfortunately, my flight doesn't arrive in New Orleans until ~10:30p on Monday night so I will miss the festivities. You can blame my youngest son Cole... because of his birth at the end of August, I switched my fall teaching duties to an overload this spring. I will be teaching class until ~5:00p. on Monday before heading down to NO. Please, pass my regrets along to the party-ers. Best, Andy

—*What can I say, Andy? We'll start without you!!*—

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## —Reminders to SEAC Members—

—from Sue Lunte [ [slunte\(at\)ukans.edu](mailto:slunte(at)ukans.edu) ]—

Pittcon® 2002: As is our recent custom, we will not have a booth at the Pittsburgh Conference. The dissemination of SEAC information will take place in the vicinity of the meeting rooms where the electroanalytical papers will be presented. Please look for our brochures and assist in their distribution. Your help will be greatly appreciated, particularly at the Reilley Award Symposium on Wednesday.

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**AWARD SYMPOSIUM—CHARLES N. REILLEY AND THE YOUNG INVESTIGATOR AWARDS**

Wednesday Morning, 20 March 2002, Rooms 275-277, Morial Convention Center, New Orleans, LA  
R. Mark Wightman (*University of North Carolina at Chapel Hill*), Organizer, presiding

8:30 INTRODUCTORY REMARKS—**R. Mark Wightman** [*University of North Carolina at Chapel Hill*]

8:35 Presentation of the 2002 Charles N. Reilley Award to



**Christian Amatore**

École Normale Supérieure

by

R. Mark Wightman

8:40 (683) **AWARD ADDRESS.** OXIDATIVE STRESS AT THE SINGLE CELL LEVEL: WARFARE STRATEGIES AMONG AEROBIC CELLS—**Christian Amatore** [*École Normale Supérieure*]

9:15 (684) ELECTROCHEMISTRY IN MAGNETIC FIELD GRADIENTS—**Henry S. White** [*University of Utah*]

9:50 (685) REDOX AND PHOTOACTIVE DENDRIMERS IN SOLUTION AND ON SURFACES—**Héctor D. Abruña** [*Cornell University*]

10:25 RECESS

10:40 Presentation of the 2002 Young Investigator Award to

**Andrew C. Hillier**

University of Virginia

by

R. Mark Wightman



10:45 (687) **AWARD ADDRESS:** CHARACTERIZATION OF ELECTRO-OXIDATION CATALYSTS WITH SCANNING ELECTROCHEMICAL AND MASS SPECTRAL METHODS—**Andrew C. Hillier** [*University of Virginia*]

11:20 (688) WATCHING BIOLOGICAL CELLS COMMUNICATE—**R. Mark Wightman** [*University of North Carolina at Chapel Hill*]

## **Other Pittcon® 2002 Symposia of Interest—Morial Convention Center**

[ *i.e.*, symposia with SEAC fingerprints all over them ]

### Sunday afternoon, 17 March 2002

—SUNDAY POSTER SESSION (Authors present from 5:30–7:30p) La Nouvelle Orleans Ballroom A-B

### Monday morning, 18 March 2002

—THE PITTSBURGH CONFERENCE ACHIEVEMENT AWARD—arranged by Adrian C. Michael [*University of Pittsburgh*], Presiding; Rooms 252-254

—CELEBRATING DIVERSITY IN ANALYTICAL CHEMISTRY, PART I—arranged by Henry N. Blount [*National Science Foundation*], Presiding, and Theodore R. Williams [*College of Wooster*]; La Nouvelle Ballroom

—FRONTIERS IN BIOANALYTICAL IMAGING AND MICROSCOPY—Roland F. Hirsch [*U.S. Department of Energy*], Presiding, and Hoi-Ying N. Holman [*Lawrence Berkeley National Laboratory*]; Rooms 255-257

—NANO SELF-ASSEMBLIES FOR MOLECULAR RECOGNITION—Subra Muralidharan [*Western Michigan University*], Presiding; Rooms 272-273

—SUM FREQUENCY SPECTROSCOPY: A TOOL FOR SURFACE ANALYSIS—Bruce Chase [*DuPont Central Research Department*], Presiding, and Geri Richmond [*University of Oregon*]; Room 275-277

—INFRARED AND RAMAN: RAMAN SPECTROSCOPY—Carl D. Shaffer [*Bechtel-Bettis, Inc.*], Presiding; Room 263

—SENSORS: IONOPHORE-BASED SENSORS I—Eric Bakker [*Auburn University*], Presiding; Room 243

—POSTERS: ELECTROCHEMISTRY (Authors present 9:30a–12:30p); 100 Aisle of the exhibit floor

#### Monday afternoon, 18 March 2002

—ANALYTICAL CHEMISTRY OF NANOMATERIALS—arranged by Joel M. Harris [*University of Utah*], Presiding; Rooms 272-273

—CELEBRATING DIVERSITY IN ANALYTICAL CHEMISTRY, PART I—arranged by Henry N. Blount [*National Science Foundation*], Presiding, and Theodore R. Williams [*College of Wooster*]; La Nouvelle Ballroom

—BIOANALYTICAL: MONITORING BIOLOGICAL PROCESSES—Julie A. Stenken [*Rensselaer Polytechnic Institute*], Presiding; Room 240-241

—SENSORS: IONOPHORE-BASED SENSORS II—Eric Bakker [*Auburn University*], Presiding; Room 243

—POSTERS: MATERIALS (Authors present 1:30–4:30p); 100 Aisle of the exhibit floor

#### Monday evening, 18 March 2002

—POSTERS: CELEBRATING DIVERSITY IN ANALYTICAL CHEMISTRY (Authors present 5:30–7:00p); La Nouvelle Orleans Ballroom A-B

#### Tuesday morning, 19 March 2002

—PITTSBURGH ANALYTICAL CHEMISTRY AWARD SYMPOSIUM—IN HONOR OF ROYCE W. MURRAY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL—arranged by Jane N. Chan [*Bechtel-Bettis, Inc.*], John W. Timbario, [*PPG Industries, Inc.*], Presiding; Room 255-257

—LAB-ON-A-CHIP/MICROFLUIDICS—Laurie E. Locascio, [*National Institute of Standards and Technology*], Presiding; Rooms 235-236

—MATERIALS CHARACTERIZATION: TECHNIQUES FOR SEMICONDUCTOR AND RELATED MATERIALS—Neal R. Armstrong [*University of Arizona*], Presiding; Room 269

—SENSORS II—Mark A. Hayes [*Arizona State University*], Presiding; Room 245

—SEPARATION SCIENCE: STATIONARY PHASES/SOLID AND LIQUID PHASE EXTRACTIONS—William R. LaCourse [*University of Maryland Baltimore County*], Presiding; Room 243

—POSTERS: NANOTECHNOLOGY (Authors present 9:30a–12:30p); 100 Aisle of the exhibit floor

#### Tuesday afternoon, 19 March 2002

—GENETICALLY MODIFIED FOODS: FEAST OR FRANKENFOODS—arranged by Richard A. Durst [*Cornell University*], Presiding; Rooms 252-254

—LIPOSOMES IN ANALYTICAL CHEMISTRY: THEIR STUDY AND APPLICATION—arranged by Laurie E. Locascio [*National Institute of Standards and Technology*] and Mark A. Hayes [*Arizona State University*], Presiding; Rooms 240-241

—LONG RANGE ELECTRON TRANSFER: FROM ELECTROCHEMISTRY TO MOLECULAR ELECTRONICS—arranged by Richard L. McCreery [*Ohio State University*], Presiding; Room 265-266

—BIOANALYTICAL: NUCLEOTIDES, OLIGONUCLEOTIDES, AND DNA—James F. Rusling [*University of Connecticut*], Presiding; Room 242

- ELECTROCHEMISTRY: MICRO AND NANOELECTRODES—James A. Cox [*Miami University of Ohio*], Presiding; Room 270
- MATERIALS CHARACTERIZATION TECHNIQUES—Peter M. Castle [*Idaho National Engineering and Environmental Laboratory*], Presiding; Room 263
- TEACHING: INNOVATIVE APPROACHES IN SCIENCE EDUCATION—Christine L. McCreary [*University of Pittsburgh at Greensburg*], Presiding; Room 235-236
- POSTERS: SENSORS (Authors present 1:30–4:30p); 100 Aisle of the exhibit floor

#### Wednesday morning, 20 March 2002

- CHARLES N. REILLEY AND YOUNG INVESTIGATOR AWARDS SYMPOSIUM—arranged by R. Mark Wightman [*University of North Carolina at Chapel Hill*], Presiding; Room 275-277 {Be there!}
- NEW APPROACHES TO MICROFLUIDICS—arranged by Ingrid Fritsch [*University of Arkansas*], Presiding; Room 272-274
- BIOANALYTICAL: ANALYSIS OF PROTEIN AND PEPTIDE STRUCTURE AND FUNCTION—Robin L. McCarley [*Louisiana State University*], Presiding; Room 242
- SAMPLING: NEW DEVELOPMENTS IN SOLID PHASE MICROEXTRACTIONS—Alan D. Broske [*Agilent Technologies*], Presiding; Room 245
- SURFACE ANALYSIS: MODIFICATION AND CHARACTERIZATION OF SURFACES—Kim R. Williams [*Colorado School of Mines*], Presiding; Room 271

#### Wednesday afternoon, 20 March 2002

- DYNAMICALLY MEASURING BRAIN CHEMISTRY IN THE LIVING, BEHAVING BRAIN—arranged by Martyn G. Boutelle [*King's College London*], Presiding, and R. Mark Wightman [*University of North Carolina at Chapel Hill*]; Room 267-268
- BIOSENSORS AND BIOANALYTICAL SYSTEMS FOR FOOD SAFETY—arranged by Antje J. Baeumner [*Cornell University*], Presiding; Room 252-254
- ELECTROCHEMISTRY: BIOANALYTICAL I—Werner G. Kuhr [*University of California at Riverside*], Presiding; Room 242
- LAB ON A CHIP/MICROFLUIDICS: APPLICATIONS AND DNA ANALYSIS—Andrew G. Ewing [*Pennsylvania State University*], Presiding; Room 243
- MICROSCOPY: SPECTROSCOPIC AND MICROSCOPIC IMAGING TECHNIQUES—Brian R. Strohmeier [*PPG Industries, Inc.*], Presiding; Room 270
- SENSORS III—Chad E. Reese [*University of Pittsburgh*], Presiding; Room 245

#### Thursday morning, 21 March 2002

- ATOMIC FORCE MICROSCOPY MEETS THE BIOANALYTICAL SCIENCES—arranged by Marc D. Porter [*Iowa State University*], Presiding; Room 275-277
- ELECTROCHEMICAL DETECTION IN FLOW STREAMS: NEW DEVELOPMENTS—arranged by Stephen Creager [*Clemson University*], Presiding; Room 255-257
- CLINICAL CHEMISTRY APPLICATIONS—Victoria L. McGuffin [*Michigan State University*], Presiding; Room 263
- NANOTECHNOLOGY: ANALYSIS OF NANOFABRICATED MATERIALS—Victoria L. McGuffin [*Michigan State University*], Presiding; Room 263
- ELECTROCHEMISTRY: BIOANALYTICAL II—Michael D. Ryan [*Marquette University*], Presiding; Room 244
- FUELS, ENERGY AND PETROCHEMICAL: ANALYSIS OF FUELS AND PETROCHEMICAL PRODUCTS—Robert B. Lacount Sr. [*Waynesburg College*], Presiding; Room 240-241

- SENSORS IV—Roy O. Backer, Presiding; Room 245
- POSTERS: BIOANALYTICAL (Authors present 9:30a–12:30p); 100 Aisle of the exhibit floor

Thursday afternoon, 21 March 2002

- DETECTION OF TERRORIST WEAPONS: PART II—arranged by David R. Walt [Tufts University], Presiding; Room 255-257
- MICROFLUIDIC CHIPS AND MASS SPECTROSCOPY MEET THE PROTEOMICS CHALLENGE—arranged by D. Jed Harrison [University of Alberta], Presiding; Room
- PHENOTYPING: COMPREHENSIVE ANALYSIS OF BIOLOGICAL SAMPLES—arranged by Michael J. Natan [SurroMed, Inc.], Presiding; Room 265-266
- THE ROLE OF BIOANALYTICAL CHEMISTS IN PROFILING THE BIOPHARMACEUTICAL PROPERTIES OF DRUG CANDIDATES—arranged by Ronald T. Borchardt, Presiding, and Susan M. Lunte [University of Kansas], Room 252-254
- BIOANALYTICAL CHEMISTRY—Charles S. Henry [Mississippi State University], Presiding; Room 243
- BIOANALYTICAL: CAPILLARY ELECTROPHORESIS—MICRO—BIOANALYTICAL TECHNIQUES AND NOVEL DEVELOPMENTS IN THE BIOANALYTICAL AREA—Richard V. Crilley [Conneaut School District], Presiding; Room 244
- ELECTROCHEMISTRY: NOVEL ELECTRODES AND SURFACES—Theresa D. Golden [University of North Texas], Presiding; Room 245
- Sensors: Chemical Sensors—Joseph F. Benga [PPG Industries, Inc.], Presiding; Room 240-241

Friday morning, 22 March 2002

- ELECTROCHEMISTRY: VARIOUS APPLICATIONS—Joseph A. Caruso [University of Cincinnati], Presiding; Room 271
- NEXT GENERATION ENVIRONMENTAL SENSORS—arranged by Peter M. Castle [Idaho National Engineering and Environmental Laboratory], Presiding, and Gerald Boyd [U.S. Department of Energy]; Room 265-266

—Check it out!— <http://www.pittcon.org>

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**—Reminders to SEAC Members—**

**—and now a message from Harry Mark,  
Chair of the Nominations Committee—**

(yes, there is a committee, not just Harry!)

As stated in the Society's Bylaws, suggestions for candidates can be made by SEAC members to the Nominations Committee at any time during the year—we welcome your input. The names of potential candidates can be forwarded to: [markhb@email.uc.edu](mailto:markhb@email.uc.edu) The preparation of the next ballot will begin in early Autumn 2002.



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—Kudos to Former SEAC EI Prez and Reilley Awardee, Royce W. Murray—

**2002 PITTSBURGH ANALYTICAL CHEMISTRY AWARD WINNER**

SEAC members continue their highly successful (almost embarrassingly so) run at the Pittsburgh Analytical Chemistry Award, with the 2002 honors going to SEAC's Ex-EI Prez and 1988 Charles N. Reilley Awardee: **Royce W. Murray**, the Kenan Professor of Chemistry and of Applied Materials Science at the University of North Carolina at Chapel Hill. The Pittcon®2002 Award Symposium in Royce's honor will be held Tuesday morning, 19 March 2002; the program follows below.

AWARD SYMPOSIUM—PITTSBURGH ANALYTICAL CHEMISTRY AWARD

Tuesday Morning, 19 March 2002, Rooms 255-257, Morial Convention Center, New Orleans, LA  
Arranged by Jane N. Chan [*Bechtel-Bettis, Inc.*], Chairman of the Society for Analytical Chemists of Pittsburgh. John W. Timbario, [*PPG Industries, Inc.*], Presiding

8:30 INTRODUCTORY REMARKS— Jane N. Chan

8:35 Presentation of the 2002 Pittsburgh Analytical Chemistry Award to

**Royce W. Murray**

University of North Carolina at Chapel Hill

by

Jane N. Chan



8:40 (361) **AWARD ADDRESS.** TRANSPORT MEASUREMENTS IN NEW MATERIALS AND MEDIA—**Royce W. Murray** [*University of North Carolina at Chapel Hill*]

9:15 (362) WHAT'S NEXT IN ELECTROGENERATED CHEMILUMINESCENCE—**Allen J. Bard** [*University of Texas at Austin*], Zhifeng Ding, Rebecca Lai, Jai-Pil Choi

9:50 (363) ILLUMINATING MICROELECTRODES—**R. Mark Wightman** [*University of North Carolina at Chapel Hill*]

10:25 RECESS

10:40 (364) NEW MESOPOROUS MOLECULAR MATERIALS—**Joseph T. Hupp** [*Northwestern University*]

11:15 (365) MAKING NOTHING COUNT ON THE NANOSCALE – DESIGNING THREE DIMENSIONAL PORE-SOLID ARCHITECTURES AS ADVANCED ELECTROCHEMICAL MATERIALS—**Debra R. Rolison** [*U.S. Naval Research Laboratory*], Jeffrey W. Long, Jeremy J. Pietron, Rhonda M. Stroud, Michelle L. Anderson, Wendy S. Baker, Lala R. Qadir, Amanda L. Young

—see <http://artsandsci.unc.edu/news/news.xml?id=1948> for more on Royce's recent honors and awards, including a Festschrift in honor of his 65<sup>th</sup> birthday (the 20 September 2001 issue of *The Journal of Physical Chemistry B*), and <http://seac.tufts.edu/Murray.html> or *SEAC Communications*, 1989, 7(4) for Royce's Reilley Musings—

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## Minutes

### Meeting of the Membership of the Society for Electroanalytical Chemistry

Morial Convention Center; New Orleans, LA—7 March 2001

President **Mark Meyerhoff** called the meeting to order at 11:50 P.M. Approximately 50 members and their guests were present.

The minutes of the 2000 Meeting of the Society were distributed by the Secretary and subsequently approved.

Certificates of Appreciation were awarded to retiring Directors, **Jim Cox**, **Dick Crooks**, and **Debra Rolison**. Certificates were also awarded to the Pittsburgh Conference President and to the Conference Program Chair.

The President welcomed the new members of the Board of Directors, **Lou Coury**, **Howard Dewald**, and **Greg Swain** with terms of office having begun on 1 July 2000. He then announced the results of the most recent election. Elected as Directors for five-year terms commencing on 1 July 2001 were **Larry Bottomley**, **Sam Kounaves**, and **Jim Rusling**.

The meeting ended with a call by the President for nominations for the Reilly Award, The Young Investigator Award, and the Student Travel Grants.

The meeting was adjourned at 12:00 P.M. Respectfully submitted,

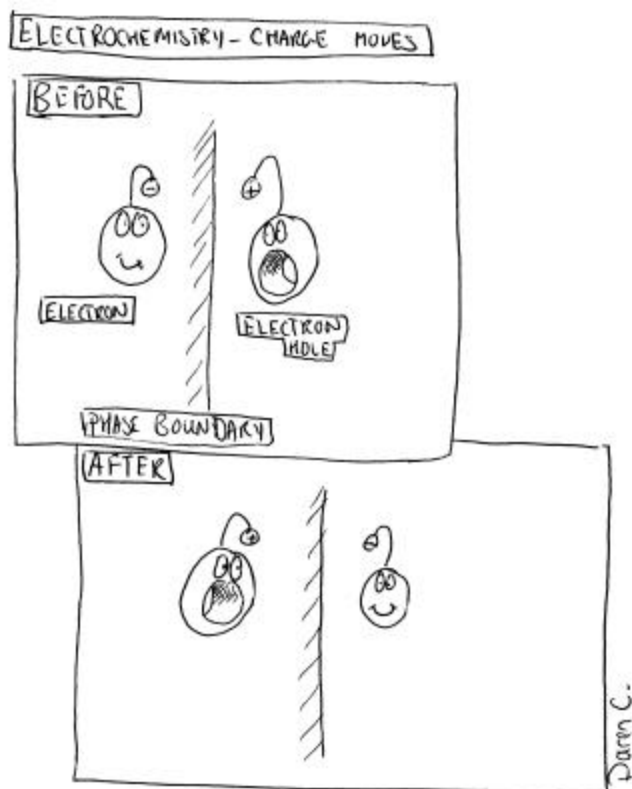
Susan Lunte, Secretary

E-mail: [slunte\(at\)ukans.edu](mailto:slunte@ukans.edu)

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### —Special Exclusive!—

Daren Caruana ([d.j.caruana\(at\)ucl.ac.uk](mailto:d.j.caruana@ucl.ac.uk)) — Cartoonist, Electrochemist, and Lecturer at the University College, London — returns with further adventures in the realm of electrochemical reality, this time, Daren reflects on the theme of the 2001 GRC on Electrochemistry organized by Your (now-Ex) Editor — “If Charge Moves, It’s Electrochemistry!”





—!! Kudos to Andrew Lyon !!—

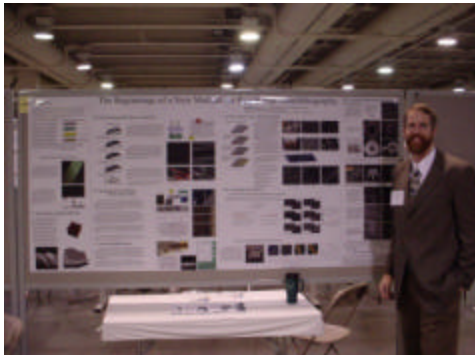
#### NAMED BECKMAN YOUNG INVESTIGATOR

Professor Andrew Lyon, Assistant Professor of Chemistry at the Georgia Institute of Technology, is the recipient of a Beckman Young Investigator Award. Accompanying the award is a three-year research grant for a comfortable sum of money. Current research in the Lyon group encompasses hydrogel nanoparticle bioconjugates, core-shell hydrogel nanoparticles, processable photonic crystals, hydrogel nanofilaments, and fast-response nanostructured polymer films. Send your congratulations to Andrew at: [lyon\(at\)chemistry.gatech.edu](mailto:lyon(at)chemistry.gatech.edu)

—More about Andrew at: [http://www.chemistry.gatech.edu/faculty/lyon/a\\_lyon.html](http://www.chemistry.gatech.edu/faculty/lyon/a_lyon.html) —

—!! Kudos to Mike Zach !!—

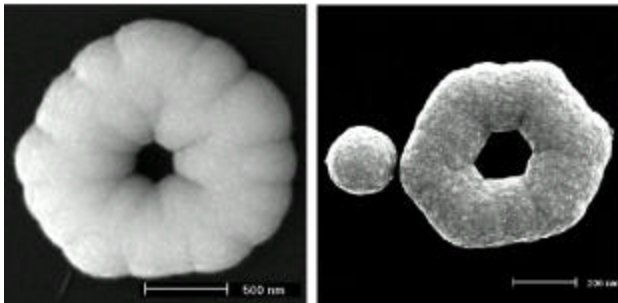
#### RECEIVES THE LAZARUS TRAVEL AWARD OF THE AAAS PACIFIC DIVISION



**Michael Zach**, graduate student extraordinaire with **Reg Penner** at UC-Irvine, received the Lazarus Travel Award of the AAAS Pacific Division in June 2001 for his poster entitled “Sensors from Electrodeposited Molybdenum Nanowires”. The poster also won first place in the Engineering and Industrial Chemistry Division and the Presidential Award at the Pacific Division. The Lazarus Travel Award permitted Mike to leave the gorgeous February weather in Irvine for Boston and the 2002 Annual Meeting of the American Association for the Advancement of Science (AAAS). Such a deal. At the AAAS meeting, Mike presented a new poster (shown, left) entitled “The

Beginnings of a New Method for Bench Top Nanolithography”. Says Mike of this singular honor: “Being able to attend that meeting was a thrill and I very much wish to thank the AAAS Pacific Division for the opportunity to present my results.”

A sample of Mike’s nanolithographic finesse is seen below as his electrode-supported nanofabricated features begin to mimic one of his best-loved objects: Krispy Kremes...

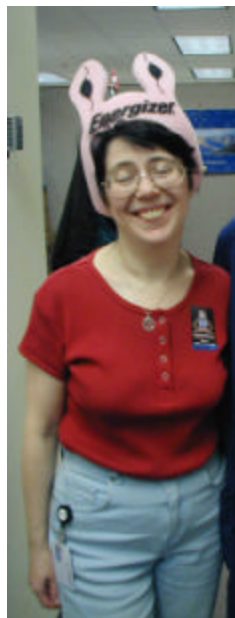


Before 10 April 2002, you can send your “thumbs-up” to Mike at: [MZach\(at\)uci.edu](mailto:MZach(at)uci.edu).

As of 20 April you will find Mike on the move, north of Irvine, to assume postdoctoral duties in Jillian Banfield’s group in the Department of Earth and Planetary Sciences at UC-Berkeley. Knowing Mike, anything could happen!!

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—SEAC on the Move!—



Beating a hasty retreat from Salt Lake City before 2002 Winter Olympics' mania set in, **Irina Serebrennikova** left the cozy basement digs of Henry White's lab at the University of Utah for the stimulating world of power sources: the Eveready Battery Company, home of the bunny. As you can see, she has clearly settled into her new life... You can find Irina at:

[Irina.Serebrennikova  
\(at\)energizer.com](mailto:Irina.Serebrennikova(at)energizer.com)

In message Mon, 4 Mar 02 09:29 +0100, Anna Farrenkopf writes:

Hallo, Debra—I'm happy to report that I have started a new electrochemistry job. My house is packed up and headed over to join me in Europe, eventually. I have arrived ahead of my books though. Please update my email and snail-mail addresses for SEAC. I look forward now to meeting you in the new year—I'll actually have the opportunity to join the ECS meetings (and not only the AGU meetings).



Have fun at Pittcon. I won't make it to New Orleans this year—but come visit the Brinkman

booth to see my colleagues! Cheers from Holland. Anna

Anna's new contact information is:

Eco Chemie B.V.  
Kanaalweg 29/G  
3526 KM Utrecht  
The Netherlands

Phone from the states: 011 +31 30 289 3154

Fax: 011 31 30 288 0715

Web: <http://www.ecochemie.nl>

Email: [anna\(at\)ecochemie.nl](mailto:anna(at)ecochemie.nl)

**Christopher Rhodes** has crossed the Mississippi river going east (after completing his Ph.D. at the University of Oklahoma with Roger Frech) only to end up in Washington, DC working for Debra Rolison in the Advanced Electrochemical Materials section at the Naval Research Laboratory... he's actually a UCLA postdoc via Bruce Dunn... so, go figure.

Loading up all he had in a beat-up Ford truck, Chris left behind him the dusty plains of Oklahoma, wild buffalo, wild Injuns, and cow-tipping and ventured to the Nation's capitol. Upon his arrival in Washington, he remarked "There's fixing to be some changes 'round this here place, ya'll."



Send greetings (and survival tips) to Chris via:

[hendrick\(at\)chemdept.chem.ncsu.edu](mailto:hendrick(at)chemdept.chem.ncsu.edu)

—Given the picture, Chris, I would suggest you start by getting a new hat...—

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## —Submission of Award Nominations—

SEAC established and administers the Charles N. Reilley Memorial Award and The Young Investigator Award. In conjunction with the presentation of these awards, SEAC arranges an Award Symposium and an informal reception in honor of the Awardees at the Pittsburgh Conference. In this way, SEAC serves as the focal point for analytical chemists who wish to exchange ideas about electroanalytical chemistry at the conference.

### Charles N. Reilley Award

The Charles N. Reilley Memorial Award, sponsored by Bioanalytical Systems, Inc., recognizes an active researcher who has made a major contribution to the theory, instrumentation, or applications of electroanalysis. Nominations for the Reilley Award should include a letter of nomination describing the individual's significant contributions to electroanalytical chemistry, at least two seconding letters of support, and curriculum vitae for the individual. All nomination materials will be retained by SEAC. Once nominated, any individual will be considered for three years, but submission of any additional supporting information or a renomination is welcome. **The decision for the 2003 Reilley Award will be based upon the material that is available to the Award Committee by 1 March 2002.**

### Young Investigator Award

The Young Investigator Award, sponsored by Cypress Systems, recognizes accomplishments by a researcher in the early stages of her or his career. Nominees must be within seven years of obtaining their Ph.D. or other terminal degree at the time of nomination. Any member of SEAC may submit a nomination. Nominations should include a letter describing the individual's promise in the area of electroanalytical chemistry, at least one seconding letter of support, and curriculum vitae for the individual. All nomination materials will be retained by SEAC. Candidates for the YI Award must be renominated each year during their year of eligibility. **The decision for the 2003 Award will be based upon the material that is available to the Award Committee on the 1st of March 2002.**

Requests for further information or submissions of nominations should be directed to:

**Professor Richard M. Crooks**  
SEAC Awards Committee  
Department of Chemistry; P. O. Box 30012  
Texas A&M University  
College Station TX 77842-3012

Tel: 979-845-5629

Fax: 979-845-1399

Email: [crooks\(at\)tamu.edu](mailto:crooks(at)tamu.edu)

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## —Reminders to SEAC Members—

### —Reminders to the Surfin' SEAC non-members—*Join us!*

... and when you do, you now have two options:

(1) print out a SEAC membership form [ <http://seac.tufts.edu/membership.html> ] and then send all NEW MEMBERSHIP APPLICATIONS and INITIAL DUES PAYMENTS to SEAC's Membership Chairman, **Rick Baldwin** [[rick.baldwin\(at\)louisville.edu](mailto:rick.baldwin(at)louisville.edu)] at:

Professor Richard Baldwin  
Department of Chemistry  
2320 South Brook Street  
University of Louisville  
Louisville KY 40292  
USA

— or —

(2) APPLY AND PAY YOUR DUES DIRECTLY ON-LINE: <http://seac.tufts.edu/membership.html>

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## —From the (E-)Mailbag—

In message Mon, 19 Nov 2001 07:29 -0500, **Bill Koch** writes:

Debra—You no doubt already have seen this, but nevertheless I want to direct your attention to the article that discusses the designation of NIST as a National Historic Chemistry Landmark. Without question we electrochemists had a significant hand in this designation, and I thought you might want to share this with the SEAC Membership.

Bill  
[william.koch\(at\)nist.gov](mailto:william.koch(at)nist.gov)

In message Mon, 19 Nov 2001 09:45 -0500, **J. Webster Long** writes:

Debra—Thumbs up on the latest SEAC newsletter. [*Tusen takk!*] I checked out the web edition over the weekend—any feedback from Henry on his photo?

Jeff  
[jwlong\(at\)ccf.nrl.navy.mil](mailto:jwlong(at)ccf.nrl.navy.mil)



*We talked on Friday, so I made him look at the newsletter while I had him on the line—he roared when he saw his "sleeping beauty" self, and then kept going back to that page and laughing some more. i.e., he won't kill you...  
Debra*

In message Fri, 30 Nov 2001 22:43 -0500, **Rick McCreery** writes:

Hi, Debra—thanks for the plug of my book in the SEAC newsletter. I didn't think anyone could convince me to write a book (Winefordner was the one who succeeded), but it sure is nice to be done with it.

Also, thanks for your efforts, and humor, on the SEAC newsletter. It is a breath of fresh air!

Rick  
[mccreery.2\(at\)osu.edu](mailto:mccreery.2(at)osu.edu)

In message Wed, 2 Jan 2002 10:30 -0500, **Clifford Walton** writes:

Folks—Just wanted to let you know that this is my last day of employment with FMC. And for

those who may be interested, you can always reach me at my personal e-mail account.

Cliff  
[Cwalton609\(at\)aol.com](mailto:Cwalton609(at)aol.com)

In message Mon, 28 Jan 2002 20:15 -0800, **Richard P. Buck** writes:

Hello All—As of Jan. 28 my new e-mail address is: [richardpbuck\(at\)earthlink.net](mailto:richardpbuck(at)earthlink.net) ... The old [richardpbuck@msn.com](mailto:richardpbuck@msn.com) won't work and I lost most of my address file! Cheers. RPB

In message Fri, 1 Feb 2002 16:09 -0800, **Herb Silverman** writes:

Please change my e-mail address to [agman\(at\)cox.net](mailto:agman(at)cox.net). Cheers. Herb

In message Wed, 13 Feb 2002 12:20 -0700, **Henry White** writes:

Debra—the following was taken at an unnamed conference held at an undisclosed location, but I think the caption should read: “Only six souls remaining after Georgia death fever wipes out 123 electrochemists at the 2002 ---.”

Horseshoe Henry  
a.k.a. El Prez-Elect  
[white\(at\)chem.utah.edu](mailto:white(at)chem.utah.edu)



**The Survivors**, from L-to-R: Dave Cliffler; Dave Wipf; Pat Unwin; Julie Macpherson; Chett Boxley; and Tedd Lister.

—*and what a death fever it was, too... cough, cough...*—

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## —National Institute of Standards & Technology Honored—

### NIST NAMED HISTORIC CHEMICAL LANDMARK

In 1992, the American Chemical Society established a program to commemorate and preserve landmarks in the history of chemistry and to heighten public awareness of the key role chemistry has played in the history of the U.S. and nations around the world. Nearly 40 places, discoveries, and devices have achieved landmark status since the program's inception—among them: the Chandler Chemistry Laboratory at Lehigh University in Bethlehem, Pa. (the first in the United States built specifically to train industrial chemists); the University of California, Berkeley's Gilman Hall (site of the identification of plutonium); and New York's Rockefeller University (home to five Nobel laureates in chemistry for breakthrough work on proteins and nucleic acids).

On 5 December 2001 during its centennial year, the National Institute of Standards & Technology (NIST) in Gaithersburg, Md. was so designated as a National Historic Chemical Landmark by the ACS. Congress chartered the federal government's first physical science research laboratory on 3 March 1901, to develop measurements and standards that strengthen the economy and improve quality of life. Originally named the National Bureau of Standards, the laboratory became the National Institute of Standards & Technology in 1988. The Chemistry Division was among the first programs at the Bureau. Today, the Chemical Science & Technology Laboratory—one of NIST's seven measurement and standards laboratories—offers the most comprehensive range of chemical, physical, and engineering measurement capabilities in its field.



Left to right: CSTL Analytical Chemistry Division Chief Willie May; Ann Mary Nefcy, board member of the local chapter of the CSW; NIST Director Arden Bement; Nina McClelland, chair, ACS Board of Directors; and CSTL Director Hrach Semerjian

A plaque commemorating the event was presented by ACS Board Chair Nina I. McClelland, who said, “Few Americans appreciate all the ways the National Institute of Standards & Technology has made our lives richer, easier, and safer—from preserving national treasures such as the Declaration of Independence, to developing air traffic control systems that enable pilots to land planes in poor visibility, to setting national standards for radiation doses used in medical diagnosis and cancer therapy.”

The plaque reads: “For 100 years, scientists and engineers at the National Institute of Standards & Technology, formerly the

National Bureau of Standards, have made broad-based and comprehensive contributions to chemical science and technology and to the economic strength and competitiveness of the United States. Through internationally recognized programs in materials characterization and standards, measurement, and calibration—and in areas as diverse as cryogenics, weather prediction, solid-state devices, and synthetic rubber—the National Institute of Standards & Technology continues to demonstrate that the intelligent application of research in physical sciences to a wide range of societal challenges contributes to a higher quality of life for everyone.”

**—For more on NIST's story, please check out Linda Raber's article in C&EN [2001, 79(51) pp. 63–64; 17 December 2001] and NIST's website: <http://www.cstl.nist.gov/land.html>—For more on the landmarks program, its website—<http://www.chemistry.org/landmarks>—features chemical landmarks, historic photographs, and interactive elements for teachers, students, and the general public—**

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**\*\* OUR CONTINUING AND HIGHLY POPULAR SEAC FEATURE \*\* — *Name That Electrochemical Nerd* ‡ !!**



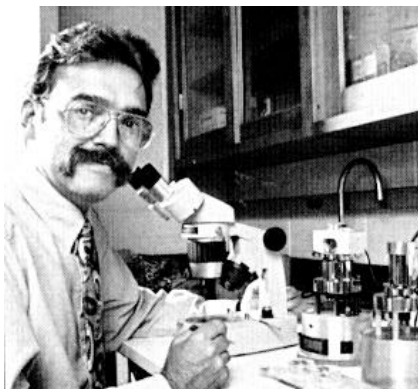
Pictured above is last issue's entrant in "*Name that Electrochemical Nerd*." The mystery man was a great mystery indeed: he is none other than **Larry Bottomley**, Professor of Chemistry at Georgia Institute of Technology [and to read more about our latest EN, check out:

[[http://www.chemistry.gatech.edu/faculty/bottomley/l\\_bottomley.html](http://www.chemistry.gatech.edu/faculty/bottomley/l_bottomley.html)].

— **Larry wins!** —

No one correctly guessed our Loser-Electrochemist du Jour. Incroyable!!!

So that SEAC experts can continue to work on their electrochemical recognition skills, here's a more recent depiction of the Essence of Electrochemical Nerdiness.



—Pictured below is this issue's entrant in "Name that Electrochemical Nerd." Again, the first correct guess (**as determined by directly contacting the pictured-herein EN—this still ain't fine print, folks!**)—will win an autographed copy of the EN's latest reprint.



—... **and if you want this feature to continue, please send in your candidates (and mystery photographs) for next issue's entrant in "Name That Electrochemical Nerd"!! to Your (New) Editor Anna Brajter-Toth at:—**

[toth\(at\)chem.ufl.edu](mailto:toth(at)chem.ufl.edu)

‡ **a.k.a. "Loser-Electrochemist!", see SEAC Communications, 1998, 14(1).**



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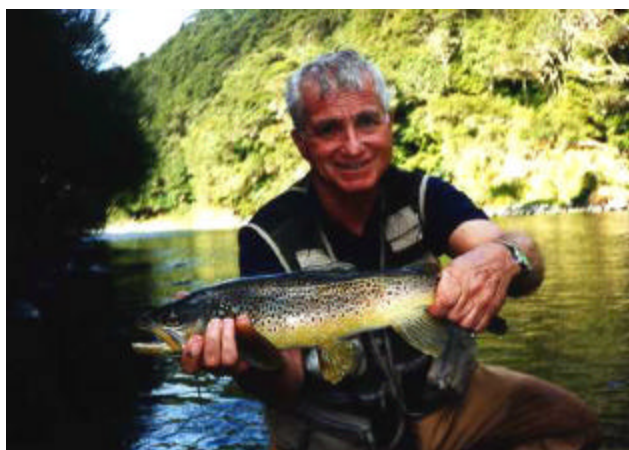
—An update from the “my fish is \*way\* bigger than your fish” category \*\*—



**Horseshoe Henry** models the catch of the day:  
*SEAC Communications 2000, 16(3)*



**Brad Bath** shows off his prize: *SEAC Communications 2001, 17(1)*



1992 Reilley Awardee **Steve Feldberg** (whose Musings are seriously overdue) is seen grappling with trout rather than electrons...

[ <http://www.bestofnzflyfishing.com/clients01/feldberg/stephen.htm> ]

Editor's Note: why are all these men smiling ??

... and the winner is... ??? well, Brad and Henry? does Steve take the Phat Phish Award??



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—SEAC Items of Note... Noted in Passing—

**A NEW PROTO-ELECTROCHEMIST ON THE SCENE !!**

Rightly proud parents **Johna Leddy** and **Malcolm Yeh** introduced Baby Zeffa LeddyYeh (born 30 August 2001) to the electrochemical scene by her recent attendance at an unnamed conference at which Johna was speaking in January 2002 (held at an undisclosed, but warm and pleasant location). If only the attendees had been as alert and well-behaved as Zeffa... just how \*did\* Andy Ewing's bedsheets get stolen? And who "pennied" Horseshoe Henry into his hotel room? Zeffa's lips are sealed... at least until she learns to talk...