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A LETTER FROM OUR NEW PRESIDENT - IS SCIENCE STILL FUN?

Those of you who remember my tongue-in-cheek editorials when I was the *SEAC Communications* editor will either be disappointed or relieved at my President's Message. For a change, I'm going to be serious, or at least try to be, as befits my exalted position (oops, there I go already).

I remember as a small boy the fun, excitement and wonder of science: looking at the stars and trying to imagine the concept of infinity; taking apart old radios and other gadgets and trying to put them back together (sometimes even successfully); and who of us didn't have a chemistry set to create all sorts of amazing concoctions. In my case, it was a significant portion of my parent's basement and contained many chemicals that would be highly illegal today! My specialty was explosives. Actually, it was rockets that often became explosive devices that sent me to the hospital more than once. Ah, the good old days. Then, when I became a real scientist (at least in my opinion), the fun and excitement was still there. The thrill of discovery, publications and the camaraderie of fellow scientists were some of the joys of science. But then, over the years, things seemed to change. While I still had many scientific friends and colleagues, the freedom of information exchange became less open. People began to be more reserved about their research ideas. Was it the tougher competition for tight funding, or the need to patent an idea before disclosing it or was it something else? Whatever the reason, it became palpable, especially at scientific meetings. Either the speaker presented old, and often already published, research, or they hid behind the all-too-common phrase, "proprietary information". The younger scientists among us probably don't sense this because they have grown up with it. But for the elder statesmen (a nice way of saying old) among us, I think this perception is accurate. Will it change? I doubt it, and it saddens me. If you disagree, write to us giving your opinion. I'm always open to correction, even if I don't like it.

On a lighter note, a hearty congratulations is in order for this year's Reilley and Young Investigator awardees, Richard Crooks and Christy Haynes.

In response to the call for newsletter contributions I sent Faye a book review, which appeared when I published my first book, *Ion-Selective Electrodes,* and it was reviewed by none other than Pete Kissinger when he was a grad student at the University of North Carolina. Of all the many reviews of my book, this was, in my opinion the most memorable and pithy. I hope you'll enjoy it as much as I did 39 years ago!

Let me end on a note of sincere thanks to the people who really make this Society function. First, our past president Sue Lunte who served us well and set a high bar for me. Also, kudos to the real workers of the organization: Jon Howell, our Secretary; Johna Leddy, our Treasurer; and Faye Rubinson, our Newsletter Editor, who will be ably assisted by the new Associate Editor, Phil Buhlmann; and Sam Kounaves, our Web Master. Finally, thanks to the Board of Directors and the many committee chairs and members for their service to SEAC. -

Dick Durst

In this issue –

Reilley and Young Investigator Awardees

Richard Crooks (UT-Austin) and Christy Haynes (U. Minn), shown below while attending the recent Microfluidics Gordon Conference, have been named our awardees for the CN Reilley and the Young investigator Awards given by the Society. The awards will be presented at Pittcon 2010 (February 28-March 5, 2010).

The *Charles N. Reilley Award in Electroanalytical Chemistry* is given in memory of one of the most distigushed analytical chemists of the 20th century. Reilley's interests were both fundamental and broad; he made seminal contributions not only to electroanalysis, but also optical spectroscopy, NMR, chromatography, data analysis, instrumentation, and surface analysis. The signature of his research was to decline empiricism, seeking a basic understanding of measurements and detection schemes. Reilley recognized that measuring things is at the heart of modern chemistry. The Award is supported by Bioanalytical Systems, Inc.

The *SEAC Young Investigator Award,* sponsored by Cypress Systems, is presented in recoginition of research accomplishments by a young electrochemist within ten years of obtaining their Ph.D. or other terminal degree.

C.N. Reilley Awardee – Richard M. Crooks

Professor Richard Crooks, currently the Department Chair and the Robert A. Welch Chair in Materials Chemistry at the University of Texas, Austin is presently carrying out investigations that encompass electrochemistry, catalysis, nanomaterials, and biological and chemical microsensors, with a focus in three main areas: (1) synthesis and characterization of very well-defined mono- and multimetallic catalysts in the 1 - 2 nm size range, (2) design and fabrication of a new family of array-based electrochemical microsensors, and (3) development of a novel means for replicating DNA and RNA microarrays. His group recently developed an approach for synthesizing very well-defined mono- and multimetallic catalysts using dendrimer templates. The process leads to stable, nearly size-monodisperse, catalytically active nanoparticles composed of Pt, Pd, Au, Ag, Ni, Fe, or Cu . It is also possible to prepare alloy and core/shell bimetallic DENs using a slight variation of this basic approach. Professor Crooks also continues to work on the development of microsensors based on massively parallel arrays of electrodes that can be interrogated simultaneously. A single potential source is required to control all the electrodes in the array, and the output is measured in parallel using electrogenerated chemiluminescence (ECL). His group is also working on parallel replication of DNA and RNA arrays, with an eye toward current emphases on personalized medicine, and he has reported fabrication of RNA replica arrays from DNA masters..

Young Investigator Awardee - Christy Haynes

Christy completed her undergraduate work at Macalester College in St. Paul, MN (1998) with a major in Chemistry and minors in Mathematics and Spanish. Christy's doctoral work was done at Northwestern University in Evanston, IL (2003) under the direction of Richard P. Van Duyne. Her doctoral thesis title is "Fundamentals and Applications of Nanoparticle Optics and Surface-Enhanced Raman Scattering." Switching gears in a big way, Christy performed postdoctoral research in the laboratory of R. Mark Wightman at the University of North Carolina, Chapel Hill Her efforts in the Wightman lab focused on applying microelectrode amperometry to probe single cell exocytosis. Now in her fourth year at University of Minnesota, Christy's group (shown at right) has broad interests in electrochemistry, catalysis, nanomaterials, and biological and chemical microsensors.

Photo by Richard G. Anderson, used with permission, from *Discovery*, the magazine of the University of Minnesota Graduate School, fall 2007.

Member Awards and Recognition

Mark Wightman Receives Katz Award

The Exocytosis-Endocytosis Subgroup of the Biophysical Society each year awards the "Sir Bernard Katz Award for Excellence in Research on Exocytosis and Endocytosis". This year, our very own Mark Wightman is being honoured for the development of cyclic voltametry and amperometry to detect single granule exocytosis, thereby providing a means to obtain real-time view of neurotransmitter dynamics. In particular, Professor Wightman was cited for his willingness to freely share these techniques. The award is named for Sir Bernard Katz, who was responsible for establishing the exocytotic nature of synaptic transmission and discovered the ligand-gated channel basis for the post-synaptic response

Rubinstein article is named a "Classic"

The latest issue (spring 2009) of the ECS magazine "Interface" is entitled "ECS Science at Its Best". Of all the papers published in the JES, the issue features six which they denote "JES Classics", namely, papers that had special impact on electrochemistry. One of the papers

chosen is from Israel Rubinstein's group, published in 1987 in collaboration with Judith Rishpon: Rubinstein, E. Sabatani, and J. Rishpon, "Electrochemical Impedance Analysis of Polyaniline Films on Electrodes" JES, **134**, 3078 (1987).

MEETINGS

2010 Gordon Conference on Electrochemistry

Attention Electroanalytical Chemists! The January 2010 Electrochemistry Gordon Research Conference schedule has been set in preliminary form, and is copied below. The conference will be held January 10 - 15, 2010 at the Four Points by Sheraton hotel in Ventura Harbor in Ventura CA, one hour north of Los Angeles and 30 minutes south of Santa Barbara. Dan Scherson (conference vice-chair) and I both extend an invitation to all to attend what we think will be a fine conference with much good science and fellowship among electrochemists of all backgrounds and persuasions. In addition, an affiliated Gordon Research Seminar (GRS) will be held on Sat and Sun Jan 9 and 10 at the same site. The GRS will be focused primarily on contributions from graduate students, postdocs and other scientists with comparable levels of experience and education. Dr. Ryan White from UCSB is chairing this GRS. For further information and/or to apply to attend either the GRC or GRS or both, please visit the GRC web site at www.grc.org. Applications may be submitted now although they will not be processed until fall 2009. Still, if you know you'll be attending, submitting an early application is always good! (Steve Creager, this year's chair, says he has already submitted his!)

2010 Electrochemistry GRC Tentative schedule / invited speakers

Sunday evening; Plenary / kickoff
Speaker 1 Nate Lewis, Caltech
Monday morning; Catalysis / Nanoelectrochemistry
Speaker 1 Andrzej Wieckowski, U of Illinois.
Speaker 2 Jens Norskov, Technical University of Denmark
Speaker 3 Stan Whittingham, SUNY Binghamton
Monday evening; Bioelectrochemical energy transduction (biofuel cells / microbial fuel cells)
Speaker 1 Ken Nealson, U of Southern Cal
Speaker 2 Leonard Tender, Naval Research Labs
Tuesday morning; Electrochemical energy storage; 1
Speaker 1 Linda Nazar, U of Waterloo
Speaker 2 Grant Smith, U of Utah
Speaker 3 Joykumar S. Thokchom U Dayton Research Institute.
Tuesday evening; Electrochemical energy storage; 2
Speaker 1 Esther S. Takeuchi, U of Buffalo
Speaker 2 Angela Belcher, MIT
Wednesday morning; New(er) investigators
Speaker 1 Takashi Ito, Kansas State U
Speaker 2 Jill Venton, U of Virginia.
Speaker 3 Ryan O'Hayre, Colo. School of Mines
Speaker 4 Janine Mauzeroll, Université de Quebec à Montréal.
Wednesday evening; Bioelectrochemistry / other
Speaker 1 Jim Rusling, U of Connecticut
Speaker 2 Zuzanna S. Siwy, U Cal Irvine.

Thursday morning; Electrochemical information storage / motion actuation
Speaker 1 Werner Kuhr, Zettacore Inc.
Speaker 2 Michael Kozicki, Arizona State U
Speaker 3 Joe Wang, U Cal San Diego
Thursday evening; Open Session

CENTER FOR ELECTROCHEMISTRY - *2nd Annual Workshop on Electrochemistry*

The Center For Electrochemistry (CEC) at UT-Austin will host their 2nd annual electrochemistry workshop entitled "Mechanistic Electrochemistry and Electroanalysis" **February 6-7, 2010 at the** AT&T Executive Education and Conference Center in Austin TX.. This exclusive workshop, featuring scientists and researchers from top universities and national labs, will discuss cutting edge electrochemical science addressing issues with respect to the mechanisms of electron transfer which enables design and application of electrochemical concepts. For instance, electrochemistry is the foundation for chemical transducers and sensors and is poised to play an increasing role in the analysis of chemical and biological interfaces; and for the high-resolution study of ion/charge transport and dynamics, electron transfer, adsorption, and chemical toxicity. Several different perspectives will be presented from 12 experts covering areas ranging from electrocatalysis, electrochemical sensors, and electroanalysis. The workshop is being organized by A. J. Bard, R. M. Crooks, A. Manthiram, J. P. Meyers, and K. J. Stevenson, and confirmed speakers include:**Charles Martin**, University of Florida, **Bill Heineman**, University of Cincinnati, **Bill Geiger**, University of Vermont, **JM Saveant** Unité Mixte de Recherche Université – CNRS, **Hubert Girault** Ecole Polytechnique Federale de Lausanne, **Radco Adzic**, Brookhaven National Laboratory, **Eric Stuve**, University of Washington, **Andrew Borcarsly**, Princeton University, **Hector Abruna,** Cornell University, **Juan Feliu**, University of Alicante, **Serge Lemay** Delft University, **Erno Pretsch** Swiss Federal Institute of Technology.
For additional information on this workshop, visit the CEC website at http://cec.cm.utexas.edu/ or contact us via email at cec@cm.utexas.edu.

PITTCON 2010

It is not too soon to begin planning for Pittcon 2010, to be held February 28-March 5 2010 in Orlando, FL USA. Once again, SEAC will hold its annual meeting at Pittcon and we hope to see everyone there!

REMINDER!! PITTCON ABSTRACT DEADLINE: FRIDAY, AUGUST 14, 2009

ACS sessions at PITTCON

In 2010, the American Chemical Society Division of Analytical Chemistry will be co-programming with The Pittsburgh Conference. After selecting the abstract submission link, ACS Analytical Division members will have the option to submit their abstract as an ACS Analytical Oral or Poster Presentation.

ACS Analytical Abstracts must contain the ACS membership number in the first line of the abstract. Non-members of ACS may use the default number of 000000. If the membership number is not present, the abstract will be removed from the database of ACS Analytical submitted abstracts. Authors may not submit duplicate abstracts to both the Pittsburgh Conference and the ACS Analytical Division. The following Oral Organized Contributed Sessions are being offered. Please indicate which session you are submitting your abstract for

by including the three letter code for the session in front of your ACS membership number. (Example: “AIP1234567”)

- Advances in Pharmaceutical and Biomedical Analysis (AIP)
- Bioanalytical Approaches to Study Cellular Communication (BAT)
- Innovations in Separation Science (IIS)
- Innovative Approaches to Analytical Science Education (IAT)
- New Frontiers in Electrochemical Energy Conversion and Storage (Stephen Maldonado, University of Michigan)
- Investigations of Microfluidic Systems with Electrochemical Detection for the Investigation of Biological Processes (Susan Lunte, University of Kansas)
- Electrochemistry and Energy (Johna Leddy, University of Iowa)
- New Investigators in Analytical Chemistry (NII)

In addition, there will be an ACS Poster Session on Monday, March 1, 2010. Again, any member wishing to be in the ACS Poster Session should select ACS Poster from the abstract submission page.

SEAC Sessions at PITTCON

- Bioanalytical Applications of Electrochemistry, BAE (Jon Kirchhoff, University of Toledo), Code: BAE
- Electrochemistry and Materials (Dick Durst, Cornell University), CODE: EAM

SEAC members can submit abstracts to these sessions by putting SEAC CONTRIBUTED ABSTRACT in the first line of their abstract along with the code associated with the session. *Authors should also send the send the abstract to the organizer at the same time.*

OTHER MEETINGS OF POSSIBLE INTEREST

Meeting/Place	Date	Website
60th Annual meeting ISE Beijing, China	16-21 August 2009	http://event09.ise-online.org
5th Int’l Fuel Cell Workshop Kofu, Japan	22-25 August 2009	http://fc-nano.yamanashi.ac.jp/english/topics/3.html
Int’l Symposium on Electrochemistry for Energy Conversion and Storage Wuhan-Three Gorges, China	22-24 August 2009	www.electrochem.whu.edu.cn/3gorges2009
Meeting/Place	**Date**	**Website**
Int’l Symposium on Nanoelectrochemistry and Spectroelectrochemistry Xiamen, China	23-26 August 2009	http://210.34.15.15/isexiamen
Electrochem 2009 Manchester, UK	16-17 September 2009	http://www.meeting.co.uk/confercare/electrochem09/
The 4th Int’l Workshop on Surface Modification for Chemical and Biochemical Przegorzaly, Poland	6-10 November 2009	http://www.science24.com/event/smcbs2009/
10th Int’l symposium on Kinetics in Analytical Chemistry	2-4 December 2009	http://associated.sun.ac.za/UWC/KAC2009/

Cape Town, South Africa		
The 13th Annual Meeting of the Israel Analytical Chemical Society Tel Aviv Israel	19-20 January 2010	http://isranalytica.org.il
2nd Int'l Conference on Functional Nanocoatings Dresden, Germany	28 -31 March 2010	www.nanocoatings2010.de
Second Regional Symposium on Electrochemistry - South-EaDate: Belgrade, Serbia	6-10 June 2010	http://rse-see.net
ISE Spring Meeting Columbus OH USA	3-6 May 2010	http://spring10.ise-online.org
8th Int'lSymposium on Electrochemical Impedance Spectroscopy Date: Carvoeiro, Algarve	6-11 June 2010	http://www.eis2010.org
61st Annual Meeting ISE Nice, France	26 September - 1 October 2010	http://neos.fontismedia.com/ise_events/ise10_annual//index.php
9th Int'l Frumkin Symposium Moscow, Russia	24-29 October 2010	http://phyche.ac.ru/frumkinsymp/

KISSINGER ON DURST, CIRCA 1970

Book Review, INTERFACE 5, 6 (1970), by Pete Kissinger

"**Ion-Selective Electrodes**"
R. A. Durst, Editor, National Bureau of Standards Special Publication 314, U.S. Govt. Printing Office, 480 pages ($3.50, add one-fourth for foreign mailing.). (Proceedings of the NBS Symposium, January 30-31, 1969.)

INTERFACE wishes to thank Dr. Durst for sending us a copy of his book for review on this page. We wish more authors had such an ample supply of guts. This way our library would grow at a faster rate…

This reviewer has had no research experience with ion-selective electrodes and thus feels eminently unqualified to carry out his self-assigned task. The first step was to affix a personal bookplate to the inside front cover, thus establishing ownership. Among the usual preliminaries there is a fantastic collection of biographical sketches of the 10 principal authors, topped by beautifully executed photographs. Eisenman appears somewhat cool and reserved, Jim Ross displays a smile reminiscent of that expected for young men on the make, and the rest of the boys are obviously confident. Set on picking my way through the text, I gathered pad, pencil, beer, and pretzels; moved myself into the deep meditation; and slithered into the murky world established by W. Nernst long ago.

All of the chapters stand very well by themselves and the order of attack makes little difference. I personally read from the more practical chapters towards those dealing with the finer points of the art. Eisenman's chapter (i.e. chapter 1) provided a dramatic finish. George has assembled a most lucid introduction to the theoretical progress encompassing the three major types of membrane electrodes. Chapter 2 gives Jim Ross a chance to talk about more practical aspects of solid-state and liquid membrane electrodes including capabilities, problems, and future developments. Arthur Covington does an equally admirable job on the less elegant heterogeneous membrane electrodes extensively studied by Pungor. Chapter 4, also by Covington, is entitled "Reference Electrodes" and it too is excellent. This is a chapter that

electroanalysts of all shapes and sizes could stand to concentrate on. A number of common reference electrodes are discussed with regard to their usefulness and excellent sections on liquid junction potentials and temperature effects are thrown in as an extra attraction. Don't be fooled by the title of Jim Butler's little exercise on "Thermodynamic Studies" because it is, in fact, a rather exciting discussion of many of the most important of practical considerations. I would have hoped for a more extensive treatment of the 'non-aqueous solvent' problem since none of the other fellows even mention it. One might guess the work is continuing since everyone at Tyco Labs seems to be cleaning-up DMSO (vide supra). Chapter 6 by Roger Bates and Marinus Alfenaar is of the fine quality one has grown accustomed to finding under the Bates by-line. The subject is the all important formulation and development of "Activity Standards for Ion-Selective Electrodes"—a subject that (though I realize its gravity) doesn't turn-me-on. The remaining chapters are all of a very Analytical sort. They really give an "outsider" the scoop on what ion-selective electrodes can and do, do.

Ed Moore's chapter (7) on biomedical and clinical application of the calcium ion-exchange electrodes starts off with a bang, but then slides into a little too lengthy discussion of some rather specific data (but published here for the first time). I personally enjoyed the statistical analysis of calcium in serum (e.g. cancer versus normal folks) as it provides a real feeling for the nature of this kind of work, but it remains less significant than the rest of the book. Chapter 8 comes to us from Beirut Lebanon where Raja Khuri uses microelectrodes in biomedical research. This is a great chapter for those interested in microanalysis. "Analytical Studies on Ion-Selective Membrane Electrodes" is chapter 9 with Garry Rechnitz at the helm. It's particularly good on the transient response and complex-ion studies. Truman Light discusses on-line-industrial-continuous-process analysis and the application of ion-selective electrodes thereto. The turned-on generation will admire the "environmental" aspects of Chapter 10. Watch your drinking water! An Orion Electrode in every kitchen sink in 1980. Chapter 11 (finally) was the first one I read. If I was writing a textbook on analytical chemistry, plagiarism of this chapter would be a must. It's just fantastic. Particularly interesting is the discussion of "null-point potentiometry" for determining specific ions in small samples—a simple and most beautiful analytical principle. Dr. Durst has put together a good introduction to potentiometry in general and a most enjoyable book as well. Don't neglect to read the appended "symposium discussion" for good information is hidden therein.

To summarize my feelings: the present volume appears simultaneously to be a state-of-the-art treatise and a remarkably readable introduction to the subject. There is a bit of repetition, but this is good for the uninitiated. The references are quite complete through 1968 with a few from 1969 that the editor slipped into his own chapter (why not?). Dr. Durst is to be congratulated for a most excellent index. The printing is perfect. The price is fantastically small. Every Analytical Chemist who is concerned with important developments in his science absolutely must have this book! Some of the material will go out of date, most of it won't.

GOINGS AND COMINGS

From Dennis Evans,

Here's a bit of news that you may or may not have heard: I have retired from the University of Arizona and am following my wife, Mary Wirth, to Purdue University where she will become the first W. Brooks Fortune Professor of Chemistry and I will be an Adjunct Research Professor in the chemistry department. I am moving my lab to Purdue and will have a couple of postdocs working with me there. – Dennis

POSITION ANNOUNCEMENT: POST-DOC, OAKLAND UNIVERSITY

One or two postdoc positions for biosensor development for clinical diagnosis and gas sensor development for industry safety monitoring will be available in Fall 2009. Candidates must have a Ph.D. in chemistry or related fields with strong background in surface chemistry (e.g. Self-assembled Monolayers), electrochemistry, electroanalytical chemistry (e.g. electroanalysis and electrochemical sensors) and biochemistry. Please submit a CV by email with names of 3 references to

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Please check Dr. Zeng's websites at www.oakland.edu/~zeng for details of the current projects. Review of applications will begin in August. Affirmative Action/ Equal Opportunity Employer.

…AND A WORD OF THANKS TO OUR SPONSORS

In addition to the sponsors for our awards mentioned above, SEAC benefits from the largesse of Eco Chemie, B.V. Gamry Instruments, Pine Reseach Instruments, and Princeton Applied Research. The Society also recevies support from the Pittsburgh Conference each year for our Awards Symposium.