

SEAC *communications*

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



<http://electroanalytical.org/>



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A Quote -... "Accept this as your creed that you will equip yourself for life not solely for your own benefit but for the benefit of the whole community."

SEAC President's Message

I hope this letter finds you all healthy, happy and either doing or thinking about electrochemistry!

A lot has happened since the last newsletter. The board of directors met at Pittcon and appointed committees to decide on changes to the website and new offerings. One thing we plan is to offer a “members only” section with access to electrochemical software and information. Cinthia Zoski of New Mexico State University will be organizing this. She is also chairing an ad-hoc committee to look carefully at the society bylaws and make sure they are updated to meet the issues of the 21st century! The board also appointed Carol Korzeniewski to be chair of the election nominations committee. If you have ideas for board members or officers, please pass them on to Carol. Speaking of Carol, she is chairing the Gordon Conference on Electrochemistry next winter and it promises to be scientifically exciting! Steve Creager of Clemson fame will chair an ad-hoc committee to decide if we should password the SEAC communications page to make it accessible to only SEAC members. If this takes place, the rest of the site will be open access, but it will spell out a benefit of membership. If you have comments, please do not hesitate to forward them to Steve. Of course, you are welcome to email me ([SEAC\(at\)chem.psu.edu](mailto:SEAC(at)chem.psu.edu)) with suggestions at any time and I will be sure to pass them on to the right person.

We are looking for thoughts from people that knew Charlie Reilley. We have this wonderful award named after him and much of his work still stands out, but many of us did not have the pleasure of meeting Charlie or knowing him. If you have thoughts you



would like to share with us, please send them to me or to Anna ([atoth\(at\)chem.ufl.edu](mailto:atoth(at)chem.ufl.edu)) and we will try to share them with all. In addition, we hope to add some specifics about Charlie to the award brochure in the future. After all, the award is named after him.

I had a number of SEAC tee shirts made to sell at Pittcon (photo is me selling these in Orlando – they never caught me selling them out the trunk of my car but I had to bail out Anna

out of jail- just kidding!!). After selling about 70 there are about 50 left. They come in Carolina blue, olive green and white (see photo). The back says “Electrochemists have potential.” Isn’t it true! We have sizes M, L, XL in all except the blue, for which we are currently out of the L size. The cost is \$15 and I will throw in free shipping!! If you want one, please just email me or send me a check made out to SEAC.

I am curious if there are those of us that have developed courses or parts of courses on electrochemistry or related topics that could be placed on the SEAC “members only” section of the website? If so, please contact me or Cindy Zoski ([czoski\(at\)nmsu.edu](mailto:czoski(at)nmsu.edu)) and let us know. These could be valuable resources to use to supplement our classes.



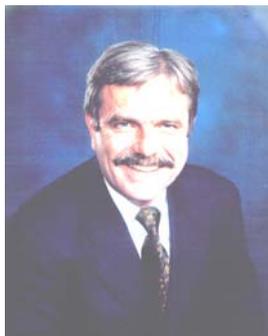
If there are members out there who have creative thoughts about SEAC, things we can do for you or things you can do for the SEAC membership, please do not hesitate to drop one of us a line.

In ending, whether you are a voltammeterist (little joke from the cold fusion days), an amperometerist, a potentiometerist or just a generic electrochemist, it should be comforting to know you have potential!

Andrew Ewing
SEAC President
President’s Message

-PITTCON® 2006 Roundup

*The **RALPH N. ADAMS AWARD IN BIOANALYTICAL CHEMISTRY** was awarded at PittCon 2006 to one of our own Prof. Mark Wightman. The symposium was organized by Ted Kuwana. If you missed PittCon here is the update.*



ROBERT MARK WIGHTMAN is the W. R. Kenan, Jr., Professor of Chemistry at the University of North Carolina at Chapel Hill, and a faculty member in the Neurobiology Curriculum and the Neuroscience Center. Prior to 1989, he was a Professor of Chemistry at Indiana University. He was an undergraduate at Erskine College, graduating in 1968. In graduate school at the University of North Carolina at Chapel Hill he studied under Royce Murray, receiving a Ph.D. degree in 1974. From 1974 to 1976 he was a postdoctoral associate in the Department of Chemistry, University of Kansas with Ralph N. Adams after whom the award is named.

Wightman’s research was in large part shaped by his time with Professor Adams. He has made scientific contributions in two different areas, electrochemistry and neurochemistry, research that is described in more than 300 publications. In electrochemistry, Wightman and his research group demonstrated that electrodes of micrometer dimensions enable exploration of domains previously inaccessible to

electrochemistry. His parallel research in neurochemistry, again using microelectrodes, provided the first real-time view of neurotransmitter dynamics in various preparations ranging from single cultured cells to the brains of animals during behavior. He has unraveled the complex electrochemical signals obtained from within the brain of awake, behaving rats to give an unprecedented view of dynamic chemical communication in the brain reward system. These studies have uncovered the previously unrecognized, subsecond signaling by dopamine that accompanies seeking of both natural- and drug-based rewards.



The **Ralph Adams Award in Bioanalytical Chemistry** being presented at **PittCon 2006** to **Mark Wightman**. Ted Kuwana on the left, Dan Wilson from PittCon, on the right.

From PittCon Awards announcements: R. Mark Wightman, W. R. Kenan, Jr. Professor of Chemistry at the University of North Carolina at Chapel Hill, will be awarded the 2006 Ralph N. Adams Award in Bioanalytical Chemistry sponsored by the Pittsburgh Conference and Friends of Ralph N. Adams. The award was established to honor an outstanding scientist who has advanced the field of Bioanalytical Chemistry through research, innovation, and/or education. Prof. R. Mark Wightman received his BA with honors from Erskine College in South Carolina in 1968 and Ph.D. in Analytical Chemistry from the University of North Carolina at Chapel Hill in 1974. After postdoctoral training at the University of Kansas with Ralph Adams, he joined the faculty of Indiana University until he went back to the University of North Carolina in 1989. His research focuses on the use of electrochemical microelectrode techniques to probe complex chemical and biochemical phenomena. These devices are being used for the generation of excited state, light emitting species from reagents generated electrochemically. In addition, exocytosis at a single biological cell is being studied. Prof. Wightman has authored or co-authored over 200 papers and holds two patents.

In recognition of his research accomplishments, Prof. Wightman's honors include a National Institutes of Health Research Career Development Award (1979-1983); Alfred P. Sloan Fellowship (1981-1983); Jacob Javits Neuroscience Investigator Award from the NIH (1989 -1995); the Chemical Instrumentation Award from the American Chemical Society in 1994; the David Graham Award from the Physical Electrochemistry Division of the Electrochemical Society in 1995; the Charles N. Reilley Award from the Society for Electroanalytical Chemistry in 1996; Simon Guggenheim Research Fellowship in 1996; the Pittsburgh Analytical Chemistry Award in 1997, and the Electrochemistry Award of the Analytical Division of the ACS in 2001. Prof. Wightman has held many

elected and appointed offices including President of the Society for Electroanalytical Chemistry, Alternate Counselor for the ACS Analytical Division, Executive Committee of the Electrochemistry Society, Physical Electrochemistry, and Chair of Enabling Biochemical Technologies, NIH Study Section. Prof. Wightman has served on the editorial advisory boards of *Biosensors and Bioelectronics*, *Analytical Chemistry*, *Journal of Pharmacology & Experimental Therapeutics*, *Journal of Electroanalytical Chemistry*, and *Synapse. Acta, Analytical Chemistry*, *Analytical and Bioanalytical Chemistry*, *BioTechniques*, *CRC Critical Reviews in Analytical Chemistry*, *Journal of Liquid Chromatography*, *Journal of Microcolumn Separations*, and *LC/GC Magazine*.

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**Yes!**

**2006 SEAC YOUNG INVESTIGATOR AWARD**

*did go* **to Keith J. Stevenson.**

Many of you caught on very quickly to Andy's announcement of the award to another recipient, in his prez message in the last issue of the Newsletter. Yours truly (the Ed- ABT) read the prez message happily, yes, and missed the change Andy made, and the letters followed. I apologize to all. Keith graciously said he will show up for the Award for sure.

**Mark Meyerhoff's and Keith's** award talks were cutting edge. The large symposium crowd had lots of new faces. The celebration dinner arrangements made by Greg Swain were as good as ever. Mike Weber of Cypress Systems and ESA hosted the dinner for Keith.

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*There were many Symposia at PittCon 2006 organized by and of interest to SEAC members in addition to the Reilley Awards Symposium. **Adrian Michael put together an interesting Pittsburgh Conference Achievement Award Symposium for Paul S. Cremer of Texas A &M** (this award recognizes individuals for outstanding achievements within 10 years of completion of a Ph.D.). *Send your program to the Newsletter if you are organizing a Symposium for PittCon 2007. SEAC is a force at PittCon and it would be great to see your contributions to it in the Newsletter.**

Dick Durst organized the symposium he describes here: The symposium was, as in the past few years, focused on advanced analytical technologies for homeland security, especially against bioterrorism. Also, as in the past, it was very well attended -- from 150 to 250 or more attendees (I have difficulty counting when I run out of fingers and toes, DD). The technologies covered electrochemical (of course) and optical methods and surprisingly (to me) the best attended talk was on SERS (although you couldn't tell from the title). But I certainly thought that Antje's (*Prof. Antje Baeumner*) talk was the best! (*Honest bias; Ed*).

The SEAC Graduate Travel Awards this year went to: **Ms. Elizabeth McGaw**, Michigan State University, Advisor: Greg Swain, Title: "Monitoring Trace Levels of Heavy Metals in Water Supplies using Anodic Stripping Voltammetry at Boron-Doped Diamond Electrodes" **and Ms. Imee Arcibal**, Penn State University, Advisor: Andy Ewing, Title: "Correlating Biogenic Amine Levels and Behavior in *Drosophila Melanogaster* with Micellar Electrokinetic Capillary Chromatography-Electrochemical Detection."

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**Our Prez has new ideas for SEAC. An update: Carol Korzeniewski, Rick Van Duyne and Mary Beth Williams join the SEAC board.** Departing officers (Rick Baldwin) and board members (Larry Bottomley, Samuel Kounaves, James Rusling) were recognized.

**We need members for committees:** The bylaws call for 5 members on each standing committee. It is necessary to have more than one or two members so that we do not reinvent the wheel each time someone steps down. Please volunteer by sending your name for one or more of the following committees to the prez or the committee chair.

**Membership:** Ingrid Fritsch (Chair)

**Nominations:** Carol Korzeniewski (Chair), Faye Rubinson, Steve Creager, Andy Ewing (ex-officio),

**Finance:** Joe Maloy (Chair), Johna Leddy, Rick Van Duyne,

**Activities:** Craig Lunte (Chair), Greg Swain,

**Web Site:** Sam Kounaves (Chair) **Need someone who can help maintain or upgrade the SEAC website. Please contact Sam at (smauel.kounaves(at)tufts.edu)**

**As always, we need to increase SEAC membership.**

**Ad-hoc committee to look into whether we should password the SEAC communications page** was appointed, chaired by Steve Creager and also serving Petr Vanesky and Ingrid Fritsch.

**A second ad-hoc committee** was appointed, chaired by Cindy Zoski and also serving Jon Howell, Joe Maloy, Ingrid Fritsch and Steve Weber **to examine the bylaws and to make recommendations as to what we should change in SEAC operations.** **According to the current bylaws, any bylaw changes need to be voted on by the membership.**

## *-SEAC Dues -*

The Society's on-line payment site accepts payments by the PayPal system. To renew your membership or to join the Society you can **pay on-line using PayPal at <http://electroanalytical.org/membership.html>**. If payment by check is preferred, send check with Membership Form, available at <http://electroanalytical.org/memberform.html>, to Professor Ingrid Fritsch, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. Phone: (479)575-6499; Fax:(479)575-4049; Email: [ifritsch@uark.edu](mailto:ifritsch@uark.edu)

**NEW** We welcome tax free donations to SEAC. For donations of \$200 or more, the treasurer writes a letter acknowledging the donation that is tax deductible.

## ~~~~~SEAC WELCOMES MEMBERS ~~~~~

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Irving Shain

Albert Fry, *Wesleyan*

Don Cannon, *University of Iowa*

Mike Mirkin, *Cuny*

Martyn Boutelle, *Department of Bioengineering, Imperial College London*

Cora Bahr, **Gamry Co**

Nedime Durust, *Abant Izzet Baysal University, Chemistry Department Golkoy Bolu, TURKEY*

Mian Jiang, *University of Huston*

Lane Baker

Emanuela Andreescu

Thomas Neal

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**Student Members:**

Chaminda Hettige, *University of Iowa*

Murat Unlu, *University of Iowa*

Danielle Franco, *University of Kentucky*

Ash Rao, *Clemson University*

Melissa Meaney, *Michigan State University*

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- SEAC Members in the News-

Professor Joseph Wang, Director - Center for Bioelectronics and Biosensors, Biodesign Institute, Departments of Chemical & Materials Engineering and Chemistry at Arizona State University was selected for the 2006 ACS (Analytical Division) Cole Parmer **Award for Electrochemistry**. The award will be given during the Fall ACS Meeting in SF (Sept. 06). **CHEERS! TO Joe!**

Check out more about Joe at <http://www.biodesign.asu.edu/centers/bb/>

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Pace University, Pleasantville, New York- **Professor David N. Rahni** was bestowed with the **Outstanding Service Award** of the **American Chemical Society (ACS) New York** section at the annual conference held at Pace University on Saturday January 21. The award recognizes his continued gratis leadership since the early 80's for the advancement of the chemical profession and enterprise, and chemistry outreach and education, as exemplified by having served as the Chair of the ACS New York (2000), member of the Executive Board (1998-2001), Member and Chair of the prestigious Nichols Medal in Chemistry (2000-2005), and the General Chair of the ACS Middle Atlantic Regional Meeting (1997). American Chemical Society, chartered by Congress in 1885, is a professional society dedicated to the advancement of the chemical enterprise and education with a worldwide membership of 160,000 and an annual budget

approaching half a billion dollars. **Prof. Rahni is one of the founding members of SEAC. Congratulations!** <http://www.DrRahni.com> [nrahni\(at\)pace.edu](mailto:nrahni@pace.edu)

**Charles R. Martin** who is the Crow Professor of Chemistry at the University of Florida has been made the U.S. Senior Editor for a new journal called *Nanomedicine*. It is published by UK-based Future Medicine, and the inaugural issue is this month. Please see the [Nanomedicine homepage](#) for more information about the journal.

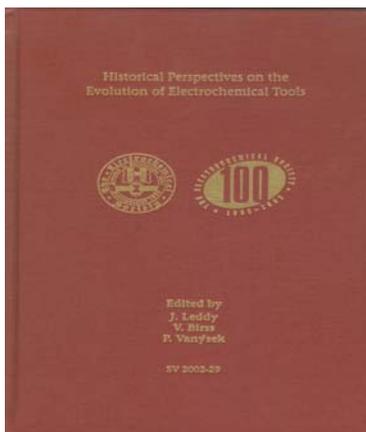
Charles Martin is a University of Florida Research Foundation Professor, a Fellow of the Electrochemical Society, and the Director of the UF Center for Research at the Bio/Nano Interface.



## BOOKS

**"Historical Perspectives on the Evolution of Electrochemical Tools".**

*A year or two ago, three editors edited this book for Physical Electrochemistry Division (now PEAD) of the ECS.*



The editors collected chapters from about 20 of the senior electrochemists on their view of the history of different parts of electrochemistry. The reports ranged from precise statements about electrochemistry to histories. Some of these histories included amusing stories. The intro includes discussion of the electrochemical genealogy, with which one can conclude that one is their own uncle.

*We are waiting for reviews as ECS has recently sent a copy for review. The volume has received little play and it is if nothing else, it is fun. Its purpose was to raise funds for student travel to ECS meetings. Take a look at this book!*

A recently published book: **"Neuroimaging in Neurodegeneration"** (Edited by David N. Rahni, Professor of Chemistry, Adj. Professor of Dermatology, Pace University and Medical College, NY,; Humana Press, 2005) has in it several integral chapters dealing with in vivo electrochemistry of brain regions. You may check at [www.humanapress.com](http://www.humanapress.com) and then in their search engine write RAHNI.

## RESOURCES: *You may be interested in a **computational tool** for molecular electrochemistry which we has recently been released as open source software.*

ECheM++ [1] is a first version of an electrochemical problem solving environment (for a discussion of this term, see [2]) and includes presently modules for modeling and simulation of electrochemical processes. Other modules are in the development process. The software is written in C++ and has been tested under the Linux operating system. It is provided under the GNU Public License, so all program source code is available, and the use of the program is also completely free. The software can be downloaded from the web-based SourceForge repository at <http://sourceforge.net/projects/echempp>.

You can download a statically linked executable (ModSim), which should run on most modern Linux installations after a few simple installation steps, or the full source tree, including an automatic installation procedure, which includes full compilation of the sources. While the second approach requires some additional knowledge and possibly the installation of a couple of software packages, it will be usable in a wider range of computational environments, and the resulting executable is more compact. README files describe the installation procedure in both cases. Also, more specific software components, for example the (electro) chemical compiler Ecco [3] can be downloaded.

The fact that we host the project on SourceForge also accounts for possibilities regarding the discussion of the use and development of the software in mailing lists and forums. This is particularly important, since - as common for open source projects - user input to the developers as regards problems, bugs, missing features etc. are most welcome. In the present case, this may be additionally important, since we have written ECheM++ in an object-oriented manner, which should allow flexible extension in many directions. Thus, the software can be regarded as a 'framework' for further development. Please do channel such information through the respective mailing lists (preferred), or send e-mail directly to me. Another feature of open source projects is the fact that interested people can directly get involved in the development process. If you should be interested in taking part, please let me know. For example, at present, we do not have the possibilities and man-power to test the software on (or port it to) the Windows operating system.

Please feel free to copy this information and send to interested colleagues, which I may not have informed. However, please excuse if you should have received this e-mail more than once. This may happen since you are on more than one of my mailing address lists.

Some publications about the background of ECheM++ have already been printed, or are in the press, see the list of papers in [1]. Let me know if you need reprints. Expanded version of ECheM++ (version 0.2) to the source forge repository has been uploaded (<http://sourceforge.net/projects/echempp>). It features an improved error estimator for the finite element simulation, has several bug fixes and now also includes some example files, which can be downloaded separately, and be used as input to ECheM++ and ModSim. Furthermore, some bugs have been fixed. Please also note that we have added pages about known problems and frequently asked questions to the ECheM++ web site, accessible through <http://echempp.sourceforge.net/>

The simulation and the algorithm has been described in detail in a recent publication: K. Ludwig

and B. Speiser, *J. Electroanal. Chem.* 588, 74 - 87 (2005). Please let me know if you need a reprint.

Bernd Speiser is interested in your opinion about this contribution to computational electrochemistry.

Bernd Speiser, Institut für Organische Chemie, Auf der Morgenstelle 18 D-72076 Tübingen, Germany phone: +49-7071-2976205 (office) +49-7071-2976242 (laboratory) fax: +49-7071-295518 e-mail: bernd.speiser@uni-tuebingen.de Internet: <http://www.uni-tuebingen.de/speiser>

References:

[1] <http://echempp.sourceforge.net/>

[2] L. Bieniasz, *Towards Computational Electrochemistry --- A Kineticist's Perspective*, in B.E. Conway and R.E. White (Eds.), *Mod. Asp. Electrochem.*, Vol. 35, Kluwer, New York, 2002, pp. 135 - 195.

[3] K. Ludwig and B. Speiser, *J. Chem. Inf. Comput. Sci.* 44, 2051 - 2060 (2004)

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**This from Carol Korzeniewski, Texas Tech** *who was recently NSF analytical chemistry program officer:*

I am writing to bring to the attention of SEAC members **new resources** being made **available through the Analytical Sciences Digital Library (ASDL)**. The ASDL is part of the National Science Digital Library project. It contains a collection of peer reviewed, web-based materials focused on chemical measurements and instrumentation. The site is freely accessible at [www.asdlib.org](http://www.asdlib.org). In addition to links to over 300 sites containing analytical chemistry content including animations, on-line texts, tutorials and virtual experiments, the portal also provides news of interest to the ASDL user community and links to other electronic library collections that have relevance to analytical chemistry.

The ASDL is offering a new service called Online Articles. Material related to teaching the science of chemical measurements and instrumentation can be submitted to ASDL for peer-review. Publication on the site is through the Creative Commons license, in which the author retains copyright. Details of submission and review requirements are posted on the ASDL website. Material submitted to Online Articles can take many forms. Currently there is focus in the areas of eCourseware, eLabware, eEducational Innovations and Practices and eUndergraduate Research Highlights.

Furthermore, SEAC members can help ASDL better serve the needs of the analytical chemistry community by suggesting websites for review, or volunteering to serve as a reviewer of ASDL content. Information can be communicated by using the "Suggest a site" and "Comment" links on the ASDL homepage, or by sending an email message to Cindy Larive at [clarive@ucr.edu](mailto:clarive@ucr.edu). The ASDL is funded by the NSF National Science Digital Library initiative (<http://nsdl.org/>).

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# WORLDWIDE, ON-LINE DIRECTORY OF GRADUATE SCHOOLS for ELECTROCHEMICAL SCIENCE AND ENGINEERING

*Under the auspices of the Ernest B. Yeager Center for Electrochemical Sciences (YCES), Case Western Reserve University, Cleveland, Ohio.*

Available at the Electrochemical Science and Technology Information Resource (ESTIR) with URL of: <http://electrochem.cwru.edu/estir/> or through anonymous ftp to: [electrochem.cwru.edu](ftp://electrochem.cwru.edu) click (change directory): pub and estir (filename: grads.txt)

A directory of graduate schools where a student can obtain a Ph.D. degree (or equivalent) by working for a professor who is specializing in electrochemical science or engineering. The file presently contains more than 500 listings from over 50 countries.

The following information is needed for a listing: (You can also use the convenient form: [http://electrochem.cwru.edu/estir/gi\\_form.htm](http://electrochem.cwru.edu/estir/gi_form.htm))

Full name:

Department:

University:

Mailing address:

Phone:

Fax:

E-mail:

WWW home page:

Degree offered and in what field of science or engineering. (The degree your students can obtain from your institution. E.g., Ph.D. in chemistry.)

A brief description of research interests, maximum ten (80 character) lines. Use keyword type descriptors to facilitate searches.

ESTIR and the FTP site contain also other material of interest to electrochemists: Electrochemistry and related subjects on the Internet (> 250 entries), WWW Sites, Newsgroups, Mailing Lists, FAQ Files, Public domain information on the Internet (over 20 entries), Bibliographies, Software, Physical/Chemical Data, Popular science information (over 100 entries) Review chapters (over 3,000 entries) Books (over 1,000 entries) Proceedings volumes (over 700 entries) Scientific/technical societies (over 20 entries) Scientific/technical journals (over 30 entries) Handbooks, bibliographies (over 40 entries) Nomenclature, standards, etc (over 30 entries) Meetings The sister sites of ESTIR are: Electrochemistry Encyclopedia (<http://electrochem.cwru.edu/ed/encycl/>) and Electrochemistry Dictionary (<http://electrochem.cwru.edu/ed/dict.htm>) If you are interested, please send the appropriate information by e-mail to [nagy@anl.gov](mailto:nagy@anl.gov)

Zoltan Nagy Materials Science Division Argonne National Laboratory Fax: (630) 252-7777 Phone: (630) 252-4355

# -Meetings.... Meetings....Meetings



**Short Course**  
**on**  
***Fundamentals and Practical Aspects of***  
***Polymer Electrolyte Membrane and Direct Methanol Fuel Cells***

**Dr. Hubert A. Gasteiger**  
**General Motors Corporation – Fuel Cell Activities**  
**Honeoye Falls (N.Y.), USA**

**Mercredi 5 juillet au vendredi 7 juillet 2006**  
**Wednesday, July 5th to Friday, July 7th 2006**  
**Salle D1-2165**  
**Room D1-2165**

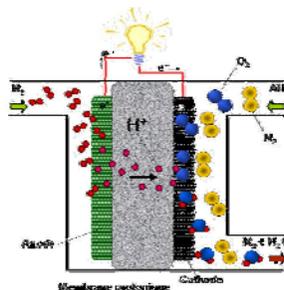
**Département de chimie**  
**Université de Sherbrooke**  
**Sherbrooke (Qc) J1K 2R1**

**This short course is organized by Prof. Gessie Brisard**  
**Centre de Recherches en Énergie Plasma et Électrochimie**

**The 6th International Symposium on New Materials for Electrochemical Systems (Montreal, July 9th-12th, 2006) will follow this short course <http://newmaterials.congresbcu.com>**



**The Electrochemical Society, Inc.**  
*the society for solid-state and*  
*Electrochemical science and technology*  
**Canadian Section Canadienne**



### ***Who should attend?***

To benefit most effectively from this course, registrants should have completed at least their first two years of a bachelor's program in physics, chemistry, engineering or have several years of R&D experience with PEMFCs or DMFCs. Homework assignments will be given on Wednesday and Thursday to provide the opportunity for clarifying questions to the course material of the following morning.

### ***Content :***

This short-course develops the fundamental thermodynamics of fuel cells and reviews the different fuel cell types and their materials characteristics. The subsequent material focuses on polymer electrolyte membrane fuel cells (PEMFC), PEMFC systems (H<sub>2</sub>/air and H<sub>2</sub>-reformat/air) as well as direct methanol fuel cells (DMFCs). We will discuss the relevant kinetic models applying to H<sub>2</sub> oxidation, reformat

oxidation (i.e., oxidation of CO-contaminated H<sub>2</sub>), O<sub>2</sub> reduction, and methanol electrooxidation. This theoretical framework will be applied to catalyst characterization and the evaluation of kinetic parameters. After presenting various *in-situ* diagnostic methods (Pt surface area, ohmic shorting, H<sub>2</sub> permeation, ohmic resistances, etc.), the different voltage/efficiency loss terms will be quantified. Finally, we will describe the impact of uncontrolled-operation events of the long-term materials degradation.

**Outline:**

- ❖ basic thermodynamics of fuel cells
- ❖ fuel cell types and electrode, electrolyte materials characteristics
- ❖ **PEMFCs:**
  - materials characteristics (membranes, diffusion media, catalysts)
  - systems for H<sub>2</sub>/air and reformat/air operation
  - O<sub>2</sub> reduction & H<sub>2</sub>(CO) oxidation: kinetic models/measurements
  - methods to determine kinetic, ohmic, and mass-transport losses
  - state-of-the-art performance and efficiency
  - current issues in materials durability and materials challenges
- ❖ **DMFCs:**
  - materials characteristics (membranes, diffusion media, catalysts)
  - methanol cross-over: measurement and system implications
  - methanol oxidation kinetics
  - state-of-the-art performance and current performance limitations
  - current issues in materials durability and materials challenges



**Hubert A. Gasteiger** received his B.S. in Technical Chemistry from the Fachhochschule Nürnberg (Germany) in 1986, his M.S. in Chemical Engineering from Oregon State University, and his Ph.D. in Chemical Engineering from the University of California at Berkeley in 1993. In 1995, he joined the Department of Surface Chemistry and Catalysis at Ulm University, where he initiated and led a research group working on fuel cell related electrocatalysis and gas-phase catalysis topics. After 9 years of academic research, he has spent 7 years industrial R&D in fuel cell materials development for automotive applications. Since 1998, Dr. Gasteiger has been leading a R&D group in fuel cell stack materials development at GM/Opel's *Fuel Cell Activities* program in Honeoye Falls (N.Y., USA). In 2004, he was promoted to *GM Technical Fellow*. Hubert Gasteiger received several teaching prizes (*DOW Chemicals Prize for Excellence in Teaching and Outstanding Graduate Student Instructor Award from UC Berkeley; Ulm University Teaching Award*) and both a Summer Fellowship Award and a Young Author Award from The Electrochemical Society. He served as *Co-Editor-In-Chief for Wiley's Handbook of Fuel Cells – Fundamentals, Technology, and Applications*. In 2004, he received the *Klaus-Jürgen Vetter Award for Electrochemical Kinetics* from the International Society of Electrochemistry.

# 2006 Joint International Meeting

*210th Meeting of The Electrochemical Society*  
*XXI Congreso de la Sociedad Mexicana de Electroquímica*  
*Cosponsored by the Sociedad Iberoamericana de Electroquímica*

**Cancun, Mexico | October 29-November 3, 2006**  
**Moon Palace Resort Hotel**

## **Please note the following deadlines:**

• **Abstract Submission Deadline – May 26, 2006!** You can submit your abstract online at <http://ecsmeet2.peerx-press.org/cgi-bin/main.plex>. The complete Call for Papers can be viewed at [http://www.electrochem.org/dl/interface/wtr/wtr05/cancun05\\_cfp.pdf](http://www.electrochem.org/dl/interface/wtr/wtr05/cancun05_cfp.pdf).

**1 Student Travel Grant Applications** are due no later than **May 26, 2006!** This can be filled out online at [https://www.electrochem.org/education/travel\\_grants/application/travelgrant\\_form.asp](https://www.electrochem.org/education/travel_grants/application/travelgrant_form.asp).

**2 Hotel Reservation Deadline – September 15, 2006!** Don't miss your opportunity to book a room in the headquarters hotel at the [all-inclusive Moon Palace Resort Hotel](#). Daily room rates include the following: 1. Unlimited meals, snacks, and beverages (including all alcoholic beverages), in twelve onsite restaurants featuring various cuisines, including Italian, Asian, Mexican, Brazilian, and Continental; 2. Mini Bar in room; 3. All gratuities (restaurants, lounges, poolside, bellmen, and housekeeping) and Hospitality Tax; 4. Water sport facilities with non-motorized equipment such as sail boats, kayaks, and paddle boats at Moon Palace Marina; 5. Complimentary tennis, bicycling, miniature golf, and use of the health club; 6. Jacuzzi in every room.

For more information regarding rates and student information, please visit [http://www.tpires.com/electrochem/ecs\\_cancun.html](http://www.tpires.com/electrochem/ecs_cancun.html)

**Meeting registration opens July 6!**

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## **Royal Australian Chemical Institute**

Analytical Chemistry Division

Environmental Chemistry Division

**Electrochemistry Division**

**Australasian Society for Ecotoxicology**

**Clean Air Society of Australia and New Zealand (CASANZ)**

**INTERACT 2006** to be held in **Perth from 24-28 September** The organising committee of **INTERACT 2006** invites your participation in this important event - "Air, Water and Earth, Interact in Perth". The tradition of cooperation between scientific streams at INTERACT

conferences started in 1993 at the RACI Conference held in Perth which brought the Analytical and Environmental Divisions together for the first time. This proved to be a success attracting more than 500 participants and the 1995 RACI Conference held in Darwin, followed in the footsteps of 1993, adding many new streams to the program. As the rigid borders of each science are stretched more and more, the cooperation between chemists, environmentalist, ecotoxicologists, biologists, hydrologists and many other scientists is required.

**INTERACT 2006** to be held in Perth from 24-28 September, extends the tradition of cooperation to yet another organisation - the Clean Air Society of Australia and New Zealand. CASANZ was invited to join the RACI Divisions of Analytical Chemistry, Environmental Chemistry and Electrochemistry and the Australasian Society of Ecotoxicology in organising this prestigious international conference.

Our world renowned keynote speakers will set a powerful framework to work within in identifying current trends and emerging issues in the scientific field. In addition, expert scientists have been confirmed in the identified topics of interest.

The strong mining and oil industries in Western Australia and The Department of Environment and the Department of Industry and Resources are expected to support and benefit from this conference.

The aim of the conference is to build knowledge, networks and participation in the advancement of science.

We hope to see you in September!

~~~~~  
Don't forget **ESEAC2006** meeting in **Bordeaux** in **June 2006**

SEAC is one of the partners in this meeting. Prof Alexander Kuhn (kuhnatenscpb.fr) has been the point of contact on the meeting and we thank him for keeping us up to date on the meeting.

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Carol Korzeniewski, Texas Tech, will chair the Gordon Conference on Electrochemistry next winter. Viola Birss is the vice-chair. **The 2007 Electrochemistry Gordon Research Conference will be held from January 14 - 19 at the Crowne Plaza, Ventura, CA.** Check grc.org for the program; we plan to include the program in an upcoming Newsletter. **If you missed the 2006 EC GRC** the link to the program is on the GRC web site: <http://www.grc.org/programs/2006/elecchem.htm> program. The chair (Tito Abruna) *“thought the meeting went exceptionally well.”* (He admits a severe bias, “but nevertheless.”) “Attendance was very good (essentially at the limit) and very few people left early. The reviews were very good.”

**International Congress of Nanobiotechnology &  
Nanomedicine 2006  
June 19-21, 2006, San Francisco**

**International Association of Nanotechnology** You are cordially invited to participate in the International Congress of Nanobiotechnology & Nanomedicine (NanoBio 2006).

We are pleased to present a faculty of distinguished speakers and experts from around the world focusing on the state-of-the-art scientific development, as well as business and investment opportunities in the emerging field of Nanobiotechnology & Nanomedicine industry.

We are pleased to welcome our key note speaker:

**The Honorable Victoria Bradshaw**

Secretary of the State of California Labor & Workforce Development Agency  
who will speak at the NanoBio 2006 on Tuesday June 20, 2006 at 8:45 AM

Please visit our web site: <http://www.nanotechcongress.com>

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BIOSENSORS 2006
Ninth World Congress on Biosensors
was held on May 10-12, 2006
Toronto, Canada

With nine symposia: 1) Nucleic acid sensors & DNA chips 2) Immunosensors 3) Enzyme-based biosensors 4) Organism- and whole cell-based biosensors 5) Natural & synthetic receptors for biosensors 6) New signal transduction technology 7) Systems integration, proteomics and single cell analysis 8) Bioelectronics, biofuel cells & nanoanalytical systems 9) Commercial developments, manufacturing and markets

<http://www.biosensors-congress.elsevier.com>.

PLENARY SPEAKERS Hermann Gaub, University of Munich, Germany Richard, Mathies, University of California, USA, Tadashi Matsunaga, Tokyo University of Agriculture & Technology, Japan, Buddy Ratner, University of Washington, USA, Itamar Willner, The Hebrew University of Jerusalem, Israel, Kenji Yokoyama, National Institute of Advanced Industrial Science and Technology (AIST), Japan.

Biosensors 2006 was organized by Elsevier in association with Biosensors & Bioelectronics. Congress
Chairman - Anthony P F Turner, Cranfield University, UK
Program Chairman (North & South America) - Frances Ligler, Naval
Research Laboratory, USA , Program Chairman (Australia, Asia, Far East) - Isao Karube, Tokyo
University of Technology, Japan , Program Chairman (Europe & Africa) - Freider Scheller, University of
Potsdam, Germany , Guest Chairman - Koji Sode, Tokyo University of Agriculture & Technology, Japan,
Local Chairman - Mike Thompson, University of Toronto, Canada

-ON THE MOVE

~~~~~  
*It's official, Marc Porter has decided to move from Iowa State to Arizona State where he will join none other than Joe Wang who moved there from New Mexico State a little over a year ago. Marc is looking forward to being a part of the Biodesign Institute Headed by former Chief Science and Technology Officer and President of Research & Development for SmithKline Beecham, George Poste. Poste was recruited by ASU President Michael Crow who has a vision of a New American University. Marc is excited about the science, but is also excited about the abundance of golf courses in and around Tempe. Marc, we wish you luck and lots of fun in the sun (the prez)!!*  
~~~~~



This picture from down under came from **Dr. Ayman Nafady** who got his Ph.D. with Bill Geiger in 2004. This is Ayman's son Abdel-Rahman Nafady. Our Australian editor is pictured in the background.

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**-JOBS** **-JOBS** **-JOBS**

## Senior Scientist (Electrochemistry, Biosensors):

*The Center for Bioelectronics and Biosensors in the Biodesign Institute (ASU, Tempe, AZ) is recruiting for a **Senior Researcher** to coordinate the Center's operations, mentor and train students, assist with scientific publications liaison with internal and external affiliates. For qualification/application information please refer to:*  
<http://www.biodesign.asu.edu/employment/>.

**Dr. Joseph Wang**, Professor Director - Center for Bioelectronics and Biosensors, Biodesign Institute  
Departments of Chemical & Materials Engineering and Chemistry Arizona State University  
1001 S. McAllister Ave P.O.Box 875801 Tempe, AZ 85287-5801, USA Tel: 480-727-0399 Fax: 480-727-0412 e-mail:  
[joseph.wang\(at\)asu.edu](mailto:joseph.wang(at)asu.edu) Websites: [www.public.asu.edu/~jwang85](http://www.public.asu.edu/~jwang85) <http://www.biodesign.asu.edu/centers/bb/>

## Postdoc Positions Available.

### **Two Postdoctoral Positions in NanoBiotechnology/Protein Chemistry /Single Molecule Detection/Single Cell Analysis**

Two postdoctoral positions in NanoBiotechnology/Protein Chemistry/Single Molecule Detection/Single Cell Analysis are available immediately in the [Old Dominion University Biomedical Sciences Program](#). Research project will involve the design and fusion of membrane proteins with fluorescent protein constructs, isolation and characterization of membrane proteins, and real-time monitoring of interaction of membrane transport (efflux pump) proteins in single living cells using state-of-the-art new nanobiotechnology and single molecule detection. Research project will also involve development of novel single-molecule microscopy and spectroscopy, and nanobiotechnology for biochemical and biomedical applications.

Detailed research plans and descriptions of our areas of interest are available at our research group web site (<http://www.odu.edu/~chem/xu.htm>). Candidates for postdoctoral positions should have Ph.D. in bioanalytical, biophysics, biochemistry, molecular and cell biology, microbiology, protein engineering or related area, and have strong background in protein chemistry, molecular and cell biology, or microbiology.

Applicants with a strong commitment to original research and a demonstrated excellence in biochemistry, biophysics, chemistry, microbiology, or molecular and cell biology research are strongly encouraged to apply. Please send a cover letter, curriculum vitae and three letters of reference to Dr. X. Nancy Xu, [Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, VA 23529](#) (email: [xhxu@odu.edu](mailto:xhxu@odu.edu); Tel/Fax: (757) 683-5698).

As a member of our research group, one will have full access to modern biological chemistry facilities and have a variety of significant opportunities to engage forefront bioanalytical and biomedical research. The [Norfolk](#) area is a beautiful city with many cultural attractions. Its location is near the ocean and only three hours drive from Washington D. C. Nearby are [Naval Research Laboratories](#), [NASA Langley Research Center](#) and the [Thomas Jefferson National Lab](#) offer many exciting collaborative opportunities.

### **Two Postdoctoral Positions in catalyst development in fuel cells and novel micro- and nanoelectrode arrays at NMSU**

(1) A postdoctoral research fellow position is available in the Department of Chemistry at New Mexico State University. Expertise in electrochemistry/electroanalytical chemistry as related to catalyst development in fuel cells, electrode surface modification, microelectrodes, nanoparticles, and scanning electrochemical microscopy (SECM) are desired. Excellent writing, communication, and computer skills are a necessity. The position involves applied and fundamental research in the area of electrochemistry /electroanalytical chemistry specifically in the area of nanoscale design of fuel cell catalysts for oxygen reduction. Please submit a letter of application, resume, and three letters of recommendation to Prof. Cynthia G. Zoski, [czoski@nmsu.edu](mailto:czoski@nmsu.edu).

(2) A postdoctoral research fellow position is available in the Department of Chemistry at New Mexico State University. Expertise in electroanalytical chemistry, electrode surface modification, micro- and nanoelectrodes, electroless template deposition, nanoparticles, microfabricated arrays, and scanning electrochemical microscopy (SECM) is desired. The project is both fundamental and applied in scope and involves the development and application of novel micro- and nanoelectrode arrays. The position is for one year with the possibility of renewal. Please submit a letter of application, resume, and three letters of recommendation to Professor Cynthia Zoski at [czoski\(at\)nmsu.edu](mailto:czoski(at)nmsu.edu).

## e- mail - you wrote

**OOOPS- I did it again.** *Henry White had to correct me on that one before. You would think I could learn. Sorry Dave and THNX! (Ed-ABT)*

Anna,

You might want to note that the figure captions of the 2005 Symposium (on pg. 6; Fall 2005 Newsletter) have me as Ed Cliffel. Unfortunately, I rarely use my middle name.... No problem really, I am sure being the editor of SEAC Comm. is relatively thanksless job (*not as long as you keep reading it!*, ABT), but at least you have my thanks for the work, it is always a good read at the end of a long day.

Best wishes and Happy thanksgiving,  
David Cliffel

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### This from Pete Kissinger:

I was asked the other day, if I'd ever return to electrochemistry from mass spectrometry. I explained that mass spectrometry IS electrochemistry. It's all about moving charges around and determining things by electron exchange. These days one even does mass spectrometry picking ions up from surfaces at atmospheric pressure. This notion is featured in the instrumentation issue of Science this spring (REVIEW **Ambient Mass Spectrometry**

**R. Graham Cooks,<sup>1\*</sup> Zheng Ouyang,<sup>1</sup> Zoltan Takats,<sup>1,2</sup> Justin M. Wiseman<sup>1</sup>**

*Science* 17 March 2006: Vol. 311. no. 5767, pp. 1566 – 1570; **NEXT FOLLOWS**

**Wightman RM** [Probing cellular chemistry in biological systems with microelectrodes](#) *SCIENCE* 311 (5767): 1570-1574 MAR 17 2006. Dare we say more! Ed.,ABT)

Think BIG electrochemists. Those who don't become a victim of their own provincialism. Don't let your past keep you from trying new approaches in the future. Methods and instruments are temporary. Chemical problems are forever.  
Pete

Anna: Don't forget to promote the SEAC tee shirts. Pete (*We sure did that!*)

Peter T. Kissinger Chairman and CEO Bioanalytical Systems, Inc. (BASi)  
2701 Kent Ave. W. Lafayette, IN 47906-1350 tel 765-497-5801 fax 765-497-1102

***This came from Columbia, South America, and is a request for information to those who know about the electrochemical nose. Maybe we can help:***

For more than two years we have been looking for systems to detect IEDs and Landmines. Daily in Colombia from one to five people are killed or injured by these devices. We found that sniffers or artificial noses could help our goals. We are working with some companies in those regards, we are very optimistic about it.

We are also looking for companies with sniffer or electrochemical nose final products to apply in the medical field for early diagnoses of lung, gastric and urinal diseases. We understand there are many options in this field. Some people believe the electrochemical noses could be used in the medical field, and others have an appositive opinion.

So we'd like to know the opinion and experiences of the university and research community, and the manufactures as well.

***Thank you for your time and help. Looking forward to hear from you soon,  
Regards, Aicardo Varon M.D Calle 8- Oeste # 24C-75 Cali -Colombia South  
América***

~~~~~  
This from Dick Durst: *Dick was the editor of the SEAC Communications (Newsletter) from 1988 to 1996. He followed Bill Geiger in the job. It would be great to hear from Bill who, as we heard, is doing great!*

Since not many of my SEAC friends know about my retirement from Cornell, I thought the



Spring/Summer issue of SEAC Communications would be a good place to announce it. I retired this January after a bit more than 15 years at Cornell (I'll be an emeritus professor and maintain a low-key research program), and after 25 years at the National Bureau of Standards (now NIST). In addition, early in my career, I briefly taught at Pomona College and Boston College. During my NBS days, I also spent more than a year in Denmark as leader of the Clinical Group at Radiometer developing the first automated pH Blood Gas and Electrolyte systems. Thus, since earning my PhD at MIT in 1963, I've worked for more than 40 years (and enjoyed most of them), and now it's time to relax (?) with my 3-year old son Vincent and 8-month old daughter Julia. Oh -- didn't I mention it -- my wife, Antje, and I just had another child (that is Julia in a picture below with the Cornell bear). We'll all be a Pittcon, so maybe you'll get a chance to see the whole family.

Best regards,

Dick-- Richard A. Durst, Ph.D. Professor of Chemistry Dept. of Food Science & Technology Cornell University Geneva, NY 14456-0462 radatcornell.edu 315-787-2297 (Tel.) 315-787-2397 (Fax) URL: <http://www.nysaes.cornell.edu/fst/faculty/durst>

"Those who would sacrifice liberty for security deserve neither." -- Ben. Franklin

"Geteiltes Leid ist halbes Leid, geteilte Freud ist doppelte Freud" -- Antje



In the pictures Julia and Vincent Durst-Baemner

=====+++++

This from Joe Wang: *I talked to Joe before PittCon and found out that that he would miss the meeting for the first time in memory. He had a good reason:*

Yes, first time, but having another bionano meeting in SDiego as Plenary talk next week... Joe

~~~~~  
**SEAC News from Sam Perone:**

After retiring from San Jose State University in 1999, Sam Perone has worked as a technical consultant in the Bay Area and devoted all his spare time to writing fiction. (Some say this has not been the first time.) To date he has published four novels. The first three were futuristic technical thrillers--a trilogy. The most recent, called *Murder Almighty*, is irreverent religious fiction. (Conspiracy and murder rock the conclave of cardinals in Rome electing a new pope.) For more current information check out [www.samperone.com](http://www.samperone.com). Sam and his wife Sylvia are living in the Sierra Foothills of Northern California and send regards to all their friends, former students from Purdue and SJSU, and colleagues in SEAC.  
Sam

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**This from Debra Rolison** *my predecessor as the SEAC Newsletter editor. Debra's activities on behalf of women in science were highlighted in the last issue of the Newsletter.*

Greetings all:  
implicit bias in action?  
from the 13-Feb-2006 cover story in Time magazine on :

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Perhaps even more important than the struggle of U.S. students to keep pace with their international peers is their failure to keep up in enthusiasm for the subject.

At 2004's Intel International Science and Engineering Fair in Portland, Ore., the world's pre-eminent pre college science event, Intel chairman Craig Barrett asked China's Education Minister how many students there take part in regional science fairs. "When he said 6 million kids, it was

a moment of reflection," says Barrett.

In the U.S., about 50,000 take part in the fairs.

Stanford University president John Hennessy is worried about a lack of role models, among other things. "We have [TV] shows about doctors, lawyers, politicians. Where are our role models of scientific innovation?" asks Hennessy. "We need Eddie the Engineer or Sam the Scientist."

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... presumably "Sam" is short for "Samantha"...

Even with President Hennessy on record with respect to the importance of attracting/retaining women in STEM (e.g., his 12-Feb-2006 op-ed piece in The Boston Globe co-written with President Hockfield [MIT] and President Tilghman [Princeton]), it's not too helpful to then discuss in such a little-read backwater forum as Time magazine the importance of Eddie and Sam as scientific "role models".

One has to laugh at the embedded view of the world we all carry and all too often display by our verbal and nonverbal slips when we least would want to do so.

It's why I still think Rep. Ehlers made such an important point when he introduced himself at a 11-Oct-2001 Congressional breakfast as "Hi, my name is Vern--and I'm a recovering racist and a recovering sexist.

Fortunately for us, Title IX: IT'S THE LAW!!!!

Remember to join us (or nudge the chair/head of your department to join us) in St Louis for the 2006 AAAS Meeting < [www.aaasmeetings.org](http://www.aaasmeetings.org) >.

Our town hall discussion/symposium on "**Assessing the STEM Enterprise Through Title IX**" takes place on Saturday, February 18, 2006 from 2:00p - 5:00p  
[our thanks to the AAAS Section on Chemistry for their sponsorship of this uppity symposium]

As you recall, I asked the "uppity" list (*I have just learnt about the list. To be added to the list you may need to contact Debra, Ed. ABT*) in late November for suggestions with respect to the most meaningful, \*useful\* data that can be provided to NSF/DOE/NASA Title IX compliance review teams to shed light on the reality of the experience facing women on faculty/staff (or as graduate students/postdoctoral associates) in your particular department/college/laboratory.

Many of your suggestions can be distilled to the following themes:

1. No single number can tell the whole story.
2. The Federal review teams should require numbers that can be compared across STEM departments, all readily available and relevant to equal opportunity:

- start-up package (not just start-up funds)
- space, including square footage and renovation money
- total compensation (salaries+ -- see the recently reported difference in salary-vs-total compensation for UC faculty < <http://www.sfgate.com/news/special/pages/2005/ucsalary/> > in the 13-Nov-2005 issue of The San Francisco Chronicle)
- allocation of discretionary funds AND research support (i.e., students/postdocs)
- teaching loads in credit hours per semester by undergraduate and graduate course load

- advising loads
- sabbaticals, other discretionary leave time
- matching funds for proposals
- representation on committees that decide on resource allocation (e.g., space, fellowships)
- number of large projects headed by women vs. those of men

3. Report the ratio of STEM Ph.D. candidates who go on to academic research positions for each gender.

4. Any fair criterion established to increase the number of women and underrepresented minorities on the faculty or laboratory staff must also announce how the bounds are set and how those bounds will evolve over time.

5. The review team should discern what the departments/labs are doing to mitigate backlash: the need to protect women from retaliation for taking advantage of family friendly policies such as stop-the-tenure clock or (in the case of postdocs and graduate students) pregnancy disability and family medical leave. The goal: effective oversight of how women are treated by those in power, and REAL TIME remediation for abuse.

My thanks to you all for putting on your thinking caps and providing important guidance. These points will be brought up during the town hall portion of the symposium. If any other suggestions/points occur to you between today and Saturday noon, 18 February, e-mail me!

my best,  
Debra

PS: we'll assume the tenured, endowed chair, XY full professor who wrote the following in response to the November mailing was just having a \*really\* bad day:

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I know why women are underrepresented in STEM Institutions.  
They are all unbearable hell holes. Women--as judged by my wife and daughter--are smarter than men. They know instinctively to avoid places like this.

A race for the bottom phenotypically speaking.

---

### ***NEW BOB OSTERYOUNG SITE:***

Some time ago I placed the Gordon Research Conference history involving Bob Osteryoung material, that was compiled by Steve Feldberg, on the web. You published the news about it. It is still there, but I do not have access to it anymore.

Recently, I got another web site and I posted the material also there. Now, it is UPDATED with some corrections that Steve has made. The link is:

<http://www.vanysek.com/electrochem/rao.htm>

*Sincerely, Petr -- Petr Vanýsek Northern Illinois University Department of Chemistry and Biochemistry*

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*This came from down under. We now know why Prof. Bond has little news for us. He is having a great time!*

**This from Steve Feldberg from Australia:** *Steve went to Darwin at the central North coast of Australia...* Darwin itself is not much; a few things to do BUT my main reason was to visit the Kakadu Park. I hooked up with a tour which hopped among the swimmable water holes (i.e., **no Crocodiles**, usually involving a spectacular waterfall) - a treat for sure, especially after a few miles of hiking in 90+ heat and 90+ humidity. This is the tail end of the wet season and as a result the rivers are flooding providing ample fresh water over the entire (huge) flood plain- so the animals are spread out. Once the dry season sets in the waters recede and the wild life congregates around the more limited water sources. Better for viewing. Keep in mind that Darwin isn't just down the road - it is roughly a 4 hour flight from Melbourne.

The last day I arranged for a day of Barramundi fishing (a very great-eating and great-fighting game fish) - that entailed five hours total driving + an hours boat ride down a well flooded river near the coast . What's more, the fishing guide was very knowledgeable on the flora and fauna. I saw much more wild life. I hooked 3 very good sized Barras - landed one, handed off my rod to one of my boat mates who had not yet hooked a fish (she landed it), and failed to land a third (the largest, of course) when it did a tail walk a couple of feet from the boat and tossed the lure. Later when the guide filleted the fish and tossed the remains into the river we watched **a nice sized Croc rise to the surface** with the remains and then swallow the all remains in a large gulp (apparently Crocs cannot eat underwater). **Great day for me. For the Croc too.**

~~~~~  
Do not miss out on the t-shirts, you will be sad.....

Dear Anna:

Obviously, I should have bought a T-shirt at the conference, and I don't know why I did not. Of course I had to meet someone right at that time, and also, I indeed never wear T-shirts (may be because I do not live in Florida) but buying one there had not much to do with this. So, for whatever reason I did not buy a T-shirt and I would like to make up for this somehow. Let me know if there is a way to do so.

(This was not anonymous; Ed)

I got responses to the request for YOUR news. I appreciate your responses and news. It is good to know that you get our e-mail notices, as we had many SPAM filters against us. Keep the news coming; and reading the Newsletter!

