

President's Message

Electroanalytical Chemists of Note

In my last message, I was urging all to have a productive summer that would involve embarking on new projects and clearing the decks of old ones. I hope that in retrospect all readers find that, indeed, things were accomplished in the past few months. Hopefully those ideas that were dreams in the spring have become functional projects today. I look forward to hearing all about these new ideas and realizations when we meet in Orlando next March for Pittcon®'99.

The Awards Committee has announced the recipients of the Society's awards for this year. Congratulations to Janet Osteryoung who is this year's Reilley Award winner. Her leadership role in electroanalytical chemistry, ranging from microelectrodes to waveforms to kinetics, has set the tone for the way in which quality work is done in our science. While doing all this great science, she also found time to be chairman at North Carolina State University and to serve as Director of the Chemistry Division at the National Science Foundation. Hopefully, she will be able to take time from her role at NSF to join us in wearing our mouse ears in Orlando. A hearty congratulations to the first woman winner of this award. In a clean sweep for North Carolina State University, Dan Feldheim is the Young Investigator Awardee. Since we have such a high density of electroanalytical chemists here in the Triangle region of North Carolina, perhaps it's only probable that both award winners should originate from this area. In any case, both awards are extremely well deserved, and the candidates exemplify the high scientific standards of the Society members. Thanks to Fred Anson for organizing the Award Symposium that will be held at the 1999 Pittsburgh Conference.

Society members are still actively participating and making this organization work. Joe Gordon has stepped down as treasurer, and our newly elected treasurer, Joe Maloy, is taking over. My sincere thanks to Joe Gordon for keeping us fiscally solvent. As most of you know, Joe Maloy has always been the inner person in the Society who keeps things moving and on track so we all

can enjoy events at Pittcon. He has relinquished his role as secretary while accepting this new position, and Andy Ewing will become secretary.

The deadline for submission of abstracts to Pittcon has now passed. I hope that all of you managed to get your submissions in on time. Pittcon and the Society have long had a close relationship, and it is good to see this continuing. I'm sure the older members (people like your editor, Debra, and Chuck Martin) remember the symposium organized by Joe Maloy entitled *Electroanalytical Methods on the Horizon*. This symposium was a standing-room only event that certainly demonstrated the need for a permanent presence of electroanalytical chemistry at Pittcon. From this symposium, and with the encouragement of Pete Kissinger and others, the Society was born almost 16 years ago. This resulted in the annual Reilley Award symposium and the variety of other symposia and contributed sessions that deal with our discipline. If you have a good idea for a symposium for Pittcon®2000, note that they encourage submission of proposals for sessions. This forum is a great way for science in new areas to be brought to the attention of a broad range of analytical chemists.

In closing, I think you should all know of a major change that has occurred here at the University of North Carolina at Chapel Hill. Richard (Dick) Buck, long-time member of this department, has decided to retire. As all that know him well may have guessed, he is heading west to his beloved California. While he will continue teaching here for a while, he is becoming harder to find in Kenan Laboratory. That's a shame, because he always had an open door, and he was always willing to discuss any electroanalytical chemistry issue. Moreover, since Dick has written papers in so many different areas of our discipline, he could provide an authoritative answer. While his departure may lower the density of SEAC members in the Triangle, it will increase it in California, and it will mean we will all have to plan westward trips to learn about such things as space charge, Warburg impedance, and the true meaning of electroneutrality.

Mark Wightman

Editorial

R. Mark and I apologize to the membership for having the August and September from hell...thus, your summer edition is now autumnal. Farewell to (your and) our incredibly busy Summer and hello to your (and our) insanely busy Fall!

This issue brings us SEAC award winners—old and new. I am christening this the “Dennis” issue as we now bring two new electroanalytical memoirs to the SEAC members—those of Dennis H. Evans, our 10th Reilley Awardee, and Dennis C. Johnson, our 14th Reilley Awardee...and only Dennis H. and Dennis C. can tell us if they colluded on joint submission! The Dennis’ musings can also be found by browsing the “Awards” category on SEAC’s website [<http://seac.tufts.edu>]; the programs for their respective award symposium can also be found on the SEAC website. As Dennis H. and I are proud members of the “Native Iowans Who Became Electrochemists” Club and Dennis C. is practicing his electrochemistry in Iowa, we could call this the “Iowa” issue.

But there is also, as Mark points out in his column, a good case to make this the “North Carolina State Rules!” issue. You will also find inside, and on SEAC’s website, biographical notes on SEAC’s latest Award winners, Janet Osteryoung, the 16th recipient of the 1999 Charles N. Reilley Award, and Dan Feldheim, the 1999 Young Investigator. Warm congratulations, Janet and Dan. We look forward to your award festivities and your research presentations in Orlando in March 1999.

Electronically, SEAC is settling into wired-to-the-members normalcy. Sam Kounaves, our Webmeister, reports on the incredible fact that our website has had ca. 16,000 requests since June 1998. Every time one visits a page on the website, it counts as a request (hit). So each unique visitor probably requests about 6 or 7 pages/visit. Exactly what we hoped for—making the home page so relevant that it gets used on a frequent per-user basis. In addition to the SEAC news and information, Sam has made our website the place to go for one-stop literature browsing by linking to the websites for the major electrochemistry journals and listing the upcoming conferences of electrochemical interest.

As ca. 20% of the membership knows, when the last issue of *SEAC Communications* was loaded

onto our website, I sent an e-mail notification to my personal e-listing of scientists with electrochemical interests (not all of whom are SEAC members, but should be!...and you know who you are!!)—but I don’t have **all** the e-addresses of the SEAC faithful...and you whose e-addresses I don’t have, know who you are! As you will read in this issue’s “From the (E-)Mail Bag”, e-notification as new content is loaded onto the SEAC website is a #1 request. SEAC’s Officers (and Your Editor) agree completely, but we need your input to make that happen. Andy Ewing, SEAC’s Secretary, is updating the membership directory, with a goal to creating a usable e-directory. Andy and I will coordinate address updates as we get them, so if you want to join your fellow wired SEACers, please e-mail Andy ([age\(at\)psu.edu](mailto:age(at)psu.edu)) or me ([rolison\(at\)nrl.navy.mil](mailto:rolison(at)nrl.navy.mil)) with your latest snail and electronic particulars.

As always, your suggestions and comments are welcome.

P.S.: Dick, you can run, but you can’t hide! Your many friends from the worlds of science and music will find their way to your Palo Alto door, just as we did to your Chapel Hill door, because there is so much we still need to learn. All the best to you and Mary Ann—the 3rd floor of Kenan will never be the same!

Debra Rolison

SEAC on the World Wide Web—<http://seac.tufts.edu>

An update from Sam Kounaves: SEAC’s Webmeister

The SEAC web site has been continually up and running well for the past six months. Since June 1st we’ve had over 16,000 hits with at least 430 identifiable unique visitors. We have been working on implementing several suggestions made during the summer, but we are always glad to hear from our web users about improving, adding new content, and especially if they know of any electroanalytically related events which might be of general interest.

Samuel Kounaves
[skounave\(at\)tufts.edu](mailto:skounave(at)tufts.edu)

*Hear Ye! Hear Ye!! Any member of SEAC wishing a hard copy of SEAC Communications to be snail-mailed to him or her after cessation of formal print publication (ca. March 1999), please contact your Editor at rolison@nrl.navy.mil
Speak, write, or e-mail now or forever hold your peace!!!*

SEAC on the Move!

In message Fri, 21 Aug 1998 11:37:02 -0500, Shaowei Chen writes:

Dear Debra—Please update my mailing address for the SEAC newsletters. By the way, I just found out that you are coming to SIU next Friday for a seminar. Obviously I am looking forward to meeting you. I am a fresh faculty member of this department, after a post-doc with Dr. Murray and a Ph.D. study with Dr. Abruña. See you soon.

Shaowei Chen
Southern Illinois University
Department of Chemistry
Carbondale, IL 62901
[schen\(at\)science.siu.edu](mailto:schen(at)science.siu.edu)

—and I had a great time visiting you, Lori Vermeulen, Bakul Dave, and your colleagues at SIU; thanks for the update, Shaowei—

In message Wed, 9 Sep 1998 17:53:13 -0400, Steven Petrovic writes:

Dear Debra—I wanted to update my mailing address for SEAC's records. I don't have a new e-mail address yet. I'm still bumming a free ride off of Ohio U. Hope all is well with you. Cheers.

P.S. Just in case you were wondering, it's been Dr. Steve since July 23rd. A load off my mind, that's for sure!!! I decided to wade into the academic waters by taking a post-doc at Brooklyn College with Maggie Ciszowska.

Steve Petrovic
Department of Chemistry
Brooklyn College-CUNY
Brooklyn, NY 11210

—Do let us know what your new e-address is when you get it, Steve. and congrats on your phase transition to Dr. Steve!—

In message Tue, 8 Sep 1998 16:25:16 -0400, Richard K. Trubey writes:

Debra—Please make the following changes to the SEAC membership records (I hope you are the appropriate person for this—I got your e-mail address from the SEAC Web Site). Thanks very much for your time.

Richard Trubey
[Trubey.Richard\(at\)orbital.com](mailto:Trubey.Richard(at)orbital.com)

OLD: Du Pont Agricultural Products
P.O. Box 80402
Wilmington, DE 19880-0402

NEW: Orbital Sciences Corporation
P.O. Box 2801
Pomona, CA 91769-2801

—Veronica Cepak (Ph.D., August 1998, Colorado State University) has bid adieu to Chuck Martin and his group to join Debra Rolison's group at the Naval Research Laboratory as an NRC Post-doctoral Fellow. She can be reached at [vmcepak\(at\)ccf.nrl.navy.mil](mailto:vmcepak(at)ccf.nrl.navy.mil)

SEAC News/Photo *Flash* — <http://seac.tufts.edu/awards.html>**1. 1999 SEAC AWARD WINNERS ANNOUNCED! (...AND IT'S NC STATE'S YEAR!!)*****Janet Osteryoung***

Charles N. Reilley Awardee Janet Osteryoung received her B.A. degree from Swarthmore College in 1961 and her Ph.D. degree under the direction of Fred C. Anson at the California Institute of Technology in 1967. She began her academic career in 1967 as an Assistant Professor in the Department of Chemistry at Montana State University. She soon moved to Colorado State University, where she remained for a decade, moving up through the ranks in the Department of Civil Engineering and Microbiology. From 1977 to 1978 she served as the Program Director for Chemical Analysis at the National Science Foundation, a position that would presage her current involvement with that organization. In 1979 she moved to the Department of Chemistry at the State University of New York at Buffalo as an Associate Professor, and was promoted to Full Professor in 1982. In 1992, she moved to the Chemistry Department at North Carolina State University as Head. She is currently Director of the Chemistry Division at the National Science Foundation, where she has served since 1994.

Osteryoung's research interests range from electroanalytical chemistry to physical studies of polyelectrolyte systems. She is perhaps best known for her many contributions to the theory and practice of pulse and square wave polarography, but she has made important contributions in a number of related areas. For example, she is a recognized expert in the determination of low levels of pesticides, carcinogens and pharmaceuticals in a variety of media. Particularly important are her contributions to the development of sound mathematical theory to optimize the fitting of theory to experimental electrochemical data, and to the use of various pulse voltammetric techniques in the study of electrochemical mechanisms. More recently, she has contributed significantly to the understanding of electrostatics in polyelectrolyte systems through the application of electrochemical and NMR techniques and theory. She has organized many symposia, written over 200 publications and given more than 350 presentations. She also co-authored a general chemistry text.

Dr. Osteryoung has received many honors, including National Science Foundation, Guggenheim and Fulbright Fellowships, the ANACHEM Award of the Association of Analytical Chemists, and she was the 1998 recipient of the Pittsburgh Analytical Chemistry Award from the SACP (Society for Analytical Chemists of Pittsburgh). In 1987 she was awarded the Garvin Medal of the American Chemical Society, and in 1996 she won the ACS Division of Analytical Chemistry Award in Electrochemistry. She has served on several editorial boards, as Associate Editor of *Electrochimica Acta*, and as Chair of the ACS Division of Analytical Chemistry. She is a Fellow of the American Association for the Advancement of Science, a Founding Member of the Society of Electroanalytical Chemistry, and served as President of that Society in 1986.

Daniel Feldheim

Since 1997, SEAC Young Investigator Award winner Daniel Feldheim has been on the faculty at North Carolina State University where his research has centered on solid state and molecular devices and sensors, rational design of colloidal superstructures and analytical chemistry in small volumes. Feldheim received his B.A. in Chemistry in 1989 at

San Jose State University. He did his Ph.D. research with Prof. C. Michael Elliott at Colorado State University, where he worked on both fullerene chemistry and the interactions of small molecules with polymer-modified electrodes. His NSF Post-doctoral Fellowship was with Prof. Thomas Mallouk at Pennsylvania State University, where he developed layer-by-layer inorganic polyelectrolyte/Au colloid thin film assembly and characterization techniques. He recently received a Research Corporation research innovation award.

—Pittcon®'99: Please join us in Orlando in March to fête Janet Osteryoung, our 1999 Reilley Award winner, and Dan Feldheim, our 1999 Young Investigator!—

1998 SEAC AWARD WINNERS CAPTURED IN PERPETUITY!

—Official Photos of the Pittsburgh Conference—



Larry Faulkner, 1998 Recipient of the C.N. Reilley Award and President of the University of Texas at Austin, accepts his award from SEAC President, Mark Wightman



Greg Swain (Utah State University), 1998 Recipient of SEAC's Young Investigator Award, accepts his check from SEAC President, Mark Wightman

—Pittcon®'99: Please join us to witness El Prez R. Mark Wightman similarly honoring Janet and Dan!—

SEAC News *Flash*

CROOKS ACCEPTS POSITION: RICHARD M. (A.K.A. "Loser-Electrochemist") CROOKS, Professor, Texas A&M University, is now the Chairman of the Awards Committee. Dick, who received his Ph.D. at the University of Texas at Austin with the inaugural Reilley Award winner, is a long-time member of SEAC.

Dick replaces Dan Buttry (University of Wyoming) as chair. Cheers to Dan for his great job and for recruiting his own replacement—as Dan notes: "By the way, I have talked Dick Crooks into taking over as chair of the awards committee, and will train him to your liking in these matters".

—a classy way to leave your duties as chairman, Dan. Thanks! (but I think Dick's arm is still sore...)—

Graduate Student Travel Award—Nominations Due 15 November 1998

The SEAC Graduate Student Travel Grant, sponsored by EG&G Instruments, Princeton Applied Research, is awarded to promising graduate students to offset the cost of travel to the Pittsburgh Conference to deliver an oral presentation in a Conference symposium. The presentation should be on a topic related to their Dissertation or Thesis, and in some area or application of electroanalytical chemistry.

Because the costs in various venues of the Conference may vary, the amount of the award will be determined by SEAC and will be between \$250 and \$500. The value of all of the awards in any one year will be equivalent, but it may vary from year to year. The award will neither exceed the reasonable cost of advance-purchase economy airfare and three days lodging at a Conference affiliated hotel, nor the awardee's actual expenses. In order to spread the travel money as equitably as possible, no more than two awardees will be selected from any one research group and no more than three awards will be made to students from any one educational institution.

Nominations for travel grants are due to the SEAC awards committee chairperson by the same date as the deadline for submission of a Pittcon abstract, generally in early August. **NOTE: For this year only, the deadline will be 15 November.** The nomination shall consist of the student's current graduate transcript, a copy of the abstract submitted to the Pittsburgh Conference, and a letter of recommendation from the student's research advisor. The advisor's letter should include a statement of approximate graduation date and a short description of the student's speaking ability. A candidate shall be considered for an award for travel to Pittcon meetings occurring up to one year after the student's Ph.D. defense. Previous awardees will not be eligible for further consideration.

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

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

Tel: 409-845-5629
FAX: 409-845-1399
E-mail: [crooks\(at\)tamu.edu](mailto:crooks(at)tamu.edu)

Award Nominations Solicited!

SEAC is responsible for the establishment and the administration of the Charles N. Reilley Memorial Award and the SEAC Young Investigator Award. Sponsored by Bioanalytical Systems, Inc. and administered entirely by SEAC, the Reilley Award recognizes an active researcher who has made a major contribution to the theory, instrumentation, or applications of electroanalysis. The Young Investigator Award recognizes accomplishments by a researcher who is within the first seven years of his or her career. This award is sponsored by Ensman Instrumentation. In conjunction with the presentation of these awards, SEAC arranges an Award Symposium and an informal reception in honor of the Awardees at Pittcon®. 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—

Nominations for the Y2k (2000) 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 a curriculum vitae for the individual. All nomination materials will be retained by SEAC. Once nominated, any individual will be considered for the Reilley Award for three years without being renominated. The submission of any additional supporting information or a renomination is welcome at any time, but the decision on the 2000 Award will be based upon the material that is available to the Award Committee by 1 March 1999.

—Young Investigator Award—

For the 2000 SEAC Young Investigator Award, nominees must be within seven years of obtaining their Ph.D. or other terminal degree at the time of nomination. Candidates may be nominated by any member of SEAC. Nominations should include a letter describing the individual's promise in the area of electroanalytical chemistry, at least one seconding letter of support, and a curriculum vitae for the individual. All nomination materials will be retained by SEAC. Once nominated, any individual will be considered for the SEAC Young Investigator Award for three years without being renominated. The submission of any additional supporting information or a renomination is welcome at any time, but the decision on the 2000 Award will be based upon the material that is available to the Award Committee by 1 March 1999.

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E-mail: [crooks\(at\)tamu.edu](mailto:crooks(at)tamu.edu)

RETURN OF A VENERABLE SEAC FEATURE—*Electrochemical Memoirs of the Reilley Awardees*

*How I Became an Electroanalytical Chemist*¹—Dennis H. Evans



My entry into the field of electroanalytical chemistry was far from direct. Upon finishing high school, I decided to attend a little-known institution of higher education in the state of Kansas, Ottawa University (more of this later). Ottawa was just what I wanted—inexpensive, more than an hour's but less than a day's drive from home and **very** religious (an attribute that was extremely important to me at the time). My central objective was to learn as much as I could about everything and also to be a Big Man On Campus, the latter task being simplified by the modest enrollment of 500 students at Ottawa.

In the autumn of my sophomore year (1957) we were all shocked to learn that the Soviet Union had launched the first manmade object to orbit the earth, Sputnik. Suddenly what was once just a hypothetical high school physics problem had become a reality and this new technical achievement engendered the political necessity of "catching up with the Russians". Now my nascent interest in science was nurtured and strengthened by the awareness that I could not only have fun but also be wonderfully patriotic at the same time.

To me, chemistry was much more fun than physics so I set out to become a chemistry major with a minor in economics because I had no idea whether one could actually make a living doing chemistry. The faculty at Ottawa did an excellent job in teaching

the fundamentals. This was in part necessitated by the fact that the practical aspects of (then) modern chemistry were largely out of reach due to the lack of equipment at the school. Analytical chemistry was my least favorite topic (a semester of gravimetric analysis followed by a semester of volumetric analysis was enough to douse my original enthusiasm) and Instrumental Analysis was that in name only (virtually no instruments in the laboratory). We did try to build a polarograph with a slidewire voltage divider and dry cells but that was largely an exercise in futility.²

When it came time to consider graduate school, I was advised by the faculty that the best school to attend was Kansas University, just twenty miles up the road in Lawrence. I thought that to be an excellent idea but to hedge my bets I applied to many other schools hoping that I could get into at least a few. To my surprise, I was admitted to them all and they even agreed to pay me to go to school, a radical new idea to this country boy! Still, it seemed most fitting and proper for me to go to KU so I drove up to visit the department. Ralph Adams must have been there at the time but I was introduced only to the organic faculty as I had checked the organic box on my application form. One of the faculty I met was Albert Burgstahler, a recent Harvard Ph.D. When Burgstahler learned that I had been admitted to Harvard *inter alia*, he did what I have never seen a faculty member do before or since—he insisted that I must accept the Harvard offer and turn down KU, his own institution!

Burgstahler was quite persuasive and, besides, I always liked to try something different and Cambridge was certainly different from Kansas! Once at Harvard, I got off to a good start and started interviewing the organic faculty. Unfortunately, Woodward was completely inaccessible and Fieser was not taking students at the time. This left Westheimer, Bartlett and the newly hired E.J. Corey as possibilities but, frankly, I didn't like any of them and, besides, organic chemistry appeared to be a lot less fun and too competitive for my taste. On a whim, I walked over from Converse Lab (where the organic folks hung out) to Coolidge Lab which was the private domain of J.J. Lingane. There I had a very pleasant talk with Professor Lingane who laid out an extremely appealing research plan and from that point on, I was hooked.

[I said there would be more about Ottawa University. Here it is. The Dean of the Graduate School at Harvard, one J.P.(?) Elder, was of the habit of interviewing each Harvard Fellowship holder so an appointment was made for me to meet the dean. After introducing himself, Dean Elder started by saying, "Mr. Evans, we at Harvard are always happy to welcome Canadian students to our university". In keeping with my general shyness and high level of insecurity, I didn't have the nerve to correct him so he never knew that it was Ottawa, Kan., not Ottawa, Can.!]

Two of us first-year students, Michael Morris and I, entered Professor Lingane's group that year. We joined Dennis Peters and Thomas Blackburn who were already well into their thesis research. In that period, the subject of investigation was solid electrodes and the *technique du jour* was chronopotentiometry. We each had a metal. Peters had platinum (extending the work of a previous Lingane student, Fred Anson), Blackburn had palladium (long before cold fusion) and mine was gold. Professor Lingane (or J.J., as he was informally called by the students) suggested that I should start by determining the mechanism of oxygen reduction at gold. I worked on this for about a year, learned as much as I thought was worthwhile, wrote a paper, then turned to other projects. The draft of the paper, submitted to J.J. on a Friday, was returned to me, heavily annotated in red ink, the following Monday. Then followed an afternoon in which J.J. and I sat side-by-side, dissecting my poor manuscript word-by-word until J.J. was satisfied that everything was expressed in the clearest and most concise form possible. This experience was one of the most valuable parts of my education. And I thought I knew how to write!

Lingane was wonderfully liberal about allowing us students to carry out any kind of project that seemed interesting. Of the six publications emanating from my Ph.D. studies, only three bore his name as co-author. Perhaps wisely, he didn't choose to associate his name with the somewhat shaky results of fledgling chemists like myself but, at the same time, he didn't insist on adding his name to work that was not his own, a trait that was (and is) not universal.³

I cannot leave the Lingane era without referring to J.J.'s theory of the "chemical basis of electrode potential". Almost every day Professor Lingane would stroll into the single large research lab we students shared, sit down with each of us individually, and talk chemistry. Usually these conversations involved the student's recent progress (or lack thereof) in research or some of J.J.'s recent research (Professor Lingane always had a project or

two of his own underway). However, sometimes the conversations turned to some of Lingane's pet theories. One of these was the "chemical basis of electrode potential". The hypothesis was so constructed: First, all electrode potentials are established through the half reaction comprising the metal of the electrode and its metallic ions in solution (as with the Ag/Ag^+ couple). Second, when an "inert" electrode such as platinum is being used, say, for indicating the potential of the $\text{Fe}^{3+}/\text{Fe}^{2+}$ couple, the electrode potential is again established by the couple comprising platinum metal and the tiny concentration of aquo platinum ions in equilibrium with the iron couple. Professor Lingane would ask us to devise experiments to test this hypothesis and seemingly endless discussion would ensue about the merits of the various ideas we students put forth. To this day, I do not know whether J.J. was really serious about this rather strange notion of the "chemical basis of electrode potential" or whether he simply wanted to teach us to think deeply about a chemical problem. It certainly had the latter effect!

In late 1963, J.J. suggested that I could begin to look for a job. The job market at that time was amazing. Every university seemed to be expanding its chemistry program and we students had the luxury of multiple job interviews and, often, several offers of employment. I was fortunate enough to have offers from three excellent universities (Pennsylvania, Florida and Kansas) but something told me I could do better. (I can't believe I was so picky!). So, I stayed on at Harvard in the strictly temporary position of Instructor in Chemistry and waited until 1966 when an opening appeared at the University of Wisconsin-Madison.

When the offer came from Madison, I was elated. The interview had made a great impression on me and I was eager to become a part of what was already a great department and also one that had ambitious plans for the future. Irv Shain was the analytical guru there and he assured me that the faculty in analytical chemistry, six at the time, was eventually destined to become a group of ten. So I set out to develop a research program in electroanalytical chemistry. My efforts in Cambridge had been almost entirely in inorganic electrochemistry using solid (mostly gold) electrodes. At the end, I began to dabble in organic reactions and in Madison I vowed that I would never again do anything as boring as inorganic electrochemistry and I would eschew solid electrodes forever. I more or less adhered to the former intention but the latter soon bit the dust when it became obvious that there were lots of things one couldn't do with mercury electrodes.

The Quiet Musings of A Mature (But Not Old!) Person —Dennis C. Johnson

My appointment as Assistant Professor at Madison came at a time when postdoctoral experience was rare among newly minted analytical chemists. Consequently, my background was not nearly as broad as I would have liked. Irv Shain was an expert in electroanalytical theory and instrumentation. His group even constructed their own general-purpose electroanalytical instrumentation based on operational amplifiers (Philbrick was the brand to use), something that was just getting started at Harvard, mainly through the efforts of Instructors like Barry Miller⁴ and Ed Moorhead. I realized that I really needed to get up to speed in this area and I was unbelievably lucky to have Irv Shain as a colleague. In many ways, Irv was the postdoctoral mentor that I had missed having and he was responsible for teaching me most of what I know about electroanalytical theory and instrumentation.

So that's how I became an electroanalytical chemist. I was asked to provide a reminiscence about the early days and that is what I have concentrated upon. However, I must acknowledge all of my graduate student and postdoctoral coworkers, both in Madison and later at the University of Delaware, who were the real driving force to bring my feeble beginnings in electroanalytical chemistry to the present level. My heartiest thanks to all of them.

- 1 I must dedicate this short article to my friend Debra Rolison whose gentle pressure has finally resulted in this much-postponed reminiscence of my early days in electroanalytical chemistry. I find that I become a bit maudlin when writing a piece of this sort and for this I apologize in advance.
- 2 Ottawa University continues to this day to be a thriving institution. It is much larger than the school I knew and has developed a strong reputation in training students for careers in public service. More about Ottawa can be found at <http://www.otu.edu>.
- 3 For more about life in the Lingane group, particularly concerning Professor Lingane's interesting views on instrumentation, see "Some Personal Recollections of my Experiences in Electroanalytical Chemistry" by Fred C. Anson. (<http://seac.tufts.edu/Anson.html>).
- 4 See the statement of Reilley Award winner, Barry Miller (<http://seac.tufts.edu/Miller.html>).

Dennis H. Evans



A majority of youthful SEAC members might conclude that any tendency to reflect upon early experiences is a sure sign of old age or some serious medical condition associated with advancing age. Therefore, I hasten to point out that I am under a perceptible amount of duress from SEAC to add my reflections to those contributed by other holders of the C.N. Reilley Award. In view of this process of reflection, it is appropriate to recite the title of an educational video prepared by Morris Massey, former Professor at the University of Colorado: "What you are is where you were when." A single viewing of this video has motivated my wife and me occasionally to play a thought game in which we ponder the differences that might exist in our lives if we had been exposed to a different environment during our formative years. Invariably, we have decided that we are pleased with our choices and thankful for the circumstances that have led to the present.

During my high school days, I developed interests in electrical circuitry and chemistry; however, I didn't realize then that those two interests could ever be brought into juxtaposition. The process of merging these interests began when, as a student at Bethel College, St. Paul, Minnesota, my general chemistry instructor, Bob Glaser, demonstrated the electrolysis of water. He showed that the rate of production of $H_2(g)$ and $O_2(g)$ was minimal without the presence of an ionic compound to function as a supporting electrolyte. From that moment, I began making plans to construct an instrument for the quantitative determination of ionic species in water. The following summer, in the inner sanctum of my

workshop back home on the farm, I assembled a dc power supply using components salvaged from an old radio and coupled it to a Heathkit ammeter to monitor electrical current passing in an electrolysis cell. In place of platinum electrodes, I used nichrome wires purchased at a local appliance repair shop. The maiden voyage of my contraption was met with only partial success. I did observe that the cell current increased as a function of added table salt; however, I was distressed that the current appeared to decrease as gas bubbles collected on the electrode surfaces. I deduced that this problem might be eliminated by the application of ac rather than dc voltage. However, before I could revise the circuitry, the summer ended and I returned to college life. During my sophomore year, my youthful inventive spirit was shattered when I learned that someone else, several decades earlier, had invented conductimetry. My analytical professor, Howard Dinsmore, noticed my intense interest in this analytical application of electricity and told me that electroanalysis was a well-established discipline within the chemical sciences. Furthermore, he informed me that Professors Kolthoff and Bruckenstein at the University of Minnesota were leading researchers in electroanalytical chemistry. I soon made it my goal to enroll at the U. of Minnesota and, hopefully, to become involved in electroanalytical research within the Kolthoff tradition.

Professor Kolthoff had retired by the time I began graduate studies in 1963; however, I was able to convince Stanley Bruckenstein to allow me to join his research group. Those were the days when rotated ring-disk electrodes (RRDEs) had been thrust to the forefront of electroanalytical thought by the appearance of the English translation of a monumental text by V.G. Levich.¹ My research partner, Duane Napp, and I were challenged to construct ring-disk electrodes in the departmental workshop. This challenge was soon transferred to Ted Hines, Pine Instrument Co., and Duane and I shifted our focus to the design and construction of circuitry for the simultaneous and independent control of the ring and disk electrodes of RRDEs. This effort was aided greatly by two papers from Irv Shain's laboratory, U. of Wisconsin, that were presented at the Symposium on Operational Amplifiers in Analytical Instrumentation at the 144th National ACS Conference.^{2,3} We were successful in building a bipotentiostat from vacuum-tube operational amplifiers and the resulting circuit became the basis of an instrument ultimately commercialized by Pine Instrument Co.

Ours was an interesting and fruitful period in Stanley's laboratory. As students we were in awe of W. John Albery who, during a single summer as a visiting professor from England, generated six theoretical papers describing the response of RRDEs. John also kept a keen eye on the afternoon

skies over Minneapolis in hopes of photographing a descending tornado funnel. In Stanley's laboratory, there existed a sense that professor, visiting scholars and students were co-workers in spite of obvious differences in academic status. Of even greater significance was the allowance of time for us, as students, to follow our own whims. In fact, I can trace nearly everything done in my own laboratory during the last 30 years to a ring-disk study initiated while Stanley was on a leave of absence. In that study, bromide adsorbed at Pt electrodes in acidic media was determined to be oxidatively desorbed as hypobromous acid concomitantly with the anodic formation of surface oxide.

The decade of the '60s corresponded to rapid development of atomic emission/absorption spectroscopy. And, with the emergence of this analytical technology, came a rapid decline in the popularity of polarography for the analysis of ores and alloys. Whereas stripping voltammetry persisted throughout the next decade for determinations of trace levels of metallic species, it became clear that those of us in love with electroanalysis must look beyond metallic analytes for worthy research pursuits.

Shortly after joining the chemistry faculty at Iowa State University in 1968, I became impressed by the fact that virtually all organic compounds can be predicted from thermodynamic data to undergo oxidation to CO₂ at electrode potentials accessible at the common inert anodes in aqueous media. Therefore, the fact that the predicted electrochemistry was not observed was a consequence of kinetic rather than thermodynamic limitations. In view of this reality, student research in my laboratory became focused on the anodic detection of polar aliphatic compounds at noble metal electrodes. We soon conceptualized the use of pulsed potential-time waveforms to manage transient catalytic states at Pt and Au electrodes for detection of alcohols and carbohydrates in flowing streams by what we called Pulsed Amperometric Detection (PAD). In its early stages, PAD was based on the use of cascaded monostable integrated circuits that controlled the sequence of events responsible for waveform generation and current measurement. Shortly thereafter, we joined hands with Dionex Corp. for further development of PAD for chromatographic detection and Dionex quickly placed PAD under microprocessor control. Several variations of the original waveform have followed, each developed to satisfy unique challenges coming from the extension of noble metal electrodes (primarily Au) to the detection of various amine and organosulfur compounds. With variations in waveform design have come the names Integrated Pulsed Amperometric Detection (IPAD), Reversed Pulsed Amperometric Detection (RPAD), Integrated Voltammetric Detection (IVD) and Integrated Square-Wave Detection (ISWD). These specific detection

strategies are now grouped together under the generic classification of Pulsed Electrochemical Detection (PED).

Efforts to overcome the kinetic challenges of anodic oxidations of organic compounds has extended to the design of new catalytic electrode materials that can support organic oxidations without perceptible loss of surface activity even when operated at constant applied potentials. Reactions of interest are those involving anodic transfer of O-atoms from H₂O to the oxidation products. Electrodes of greatest interest are those consisting of thin films of mixed oxides prepared by electrochemical or thermal deposition, as well as by anodization of alloys, that have electrocatalytic properties that are unique in comparison to those of the pure component oxides. New electrode materials coming from this research effort are foreseen to have applications as anodic sensors as well as for use in electrochemical syntheses and environmental remediation.

Thus, my early fascination with electrical circuits and electrolysis has led me down a very rewarding pathway. This trek has been possible only because of the gracious mentoring of Stanley Bruckenstein

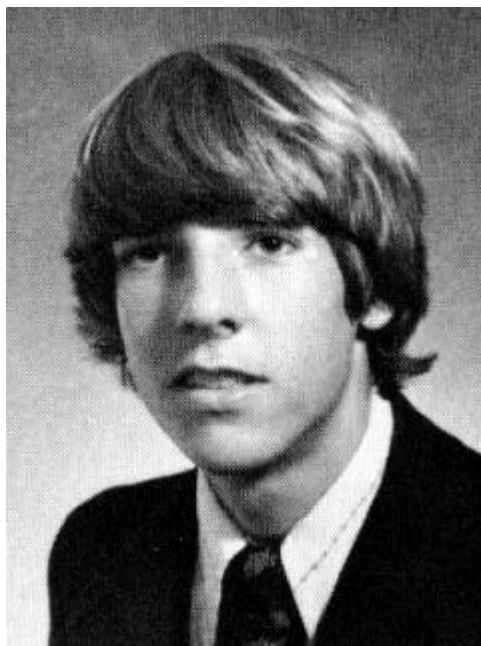
and other teachers, as well as the contributions of industrial collaborators and financial sponsors, and the hard work of students too numerous to be identified here. It is certain that if I could choose to relive my life, I'd choose to follow the same pathway; however, I'd choose to walk more quickly.

Dennis C. Johnson
7 July 1998

REFERENCES

1. V.G. Levich, *Physicochemical Hydrodynamics*, Prentice-Hall: Englewood Cliffs, NJ, 1962.
2. W.M. Schwarz and I. Shain, "Generalized circuits for electro-analytical instrumentation", *Anal. Chem.* **1963**, *35*, 1770-78.
3. W. Underkofler and I. Shain, "A multipurpose operational amplifier instrument for electroanalytical studies," *Anal. Chem.* **1963**, *35*, 1778-83.

★★NEW SEAC FEATURE★★ — *Name That Electrochemical Nerd*!!



—The first correct guess (as determined by directly contacting the pictured-herein *Electrochemical Nerd*) wins an autographed copy of the EN's latest reprint—

—...and please send in your candidates (and mystery photographs) for next issue's entrant in "*Name That Electrochemical Nerd*"!!—

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

Kudos to SEAC members!!

—**ALLEN J. BARD**, the 1st recipient of SEAC's Charles N. Reilley Award (and the Hackerman/Welch Regents' Chair in Chemistry at the University of Texas at Austin) was the recipient of the 1998 Award in the Chemical Sciences given by the National Academy of Sciences to recognize innovative research. Professor Bard was specifically cited by the NAS for "...his fundamental developments in mechanistic electrochemistry, electrochemiluminescence, semiconductor photoelectrochemistry, and scanning electrochemical microscopy."

—**ALLEN J. BARD** is also the recipient of the 1998 Pauling Award. This award is co-sponsored by the Oregon, Portland, and Puget Sound sections of the American Chemical Society and honors Oregon native, Linus Pauling. The University of Washington's Department of Chemistry will host the 1998 Pauling Symposium and Medal Presentation on Saturday, 21 November 1998 (<http://www.chem.washington.edu/paulingawardschedule.html>). Professor Bard's award address ("Electrogenerated Chemiluminescence—From Antibodies To Hot Electrons") will be presented as part of a symposium entitled *Frontiers in Electrochemistry*. Also speaking as part of the Pauling Symposium are distinguished SEAC members and Reilley Awardees: Larry Faulkner ("Electrochemistry's Third Century"), Fred Anson ("Electrochemical Applications Of Thin Layers Of Immiscible Organic Solvents Interposed Between Graphite Electrodes And Aqueous Solutions"), and Royce W. Murray ("Voltammetry in Semi-Solid Molecular Melts").

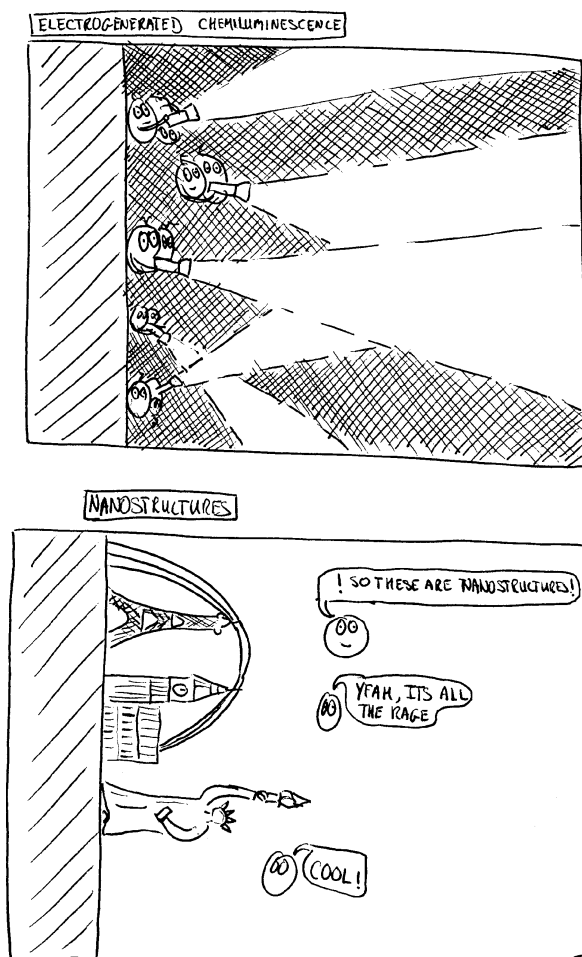
—**ROBERT KENNEDY** (University of Florida) will be presented the Findeis Young Investigator Award (given by the Division of Analytical Chemistry of the American Chemical Society) at the 1998 Eastern Analytical Symposium.

—**CHAD MIRKIN** (Northwestern University), has been named the 1999 recipient of the American Chemical Society's Award in Pure Chemistry.

—**JEAN-MICHEL SAVÉANT** (Université de Paris VII), and SEAC's 7th Reilley Awardee, was presented the Luigi Galvani Medal at the annual meeting of the Electrochemical Division of the Italian Chemical Society (September 1997) in honor of his outstanding contributions to electrochemistry.

Special Exclusive!

Daren Caruana (d.caruana@mail.utexas.edu)—Cartoonist and Electrochemist (and Post-doctoral Associate)—returns with further adventures in the realm of electrochemical reality:



—Thanks again, Daren, for a glimpse of the joys (and frustrations) of electrochemistry!! ... and Vive les Nanostructures! (is **that** what those ECL guys are looking for?)—

Plan your attendance accordingly!

NEW ELECTROCHEMICAL APPROACHES TO BIOLOGICAL AND MATERIALS SCIENCES
ACS Southeastern Regional Meeting
4-7 November 1998
Research Triangle Park, NC

Symposium on New Electrochemical Approaches in Biology and Materials Science

Royal Ballroom Salon A/ Sheraton-Imperial Hotel/Raleigh, NC

ORGANIZERS: Edmond F. Bowden ([bowden\(at\)chemdept.chem.ncsu.edu](mailto:bowden(at)chemdept.chem.ncsu.edu))
Daniel L. Feldheim ([feldheim\(at\)chemdept.chem.ncsu.edu](mailto:feldheim(at)chemdept.chem.ncsu.edu))

Session I: Thursday morning, 5 NOVEMBER 1998

PRESIDING: D. L. Feldheim

- 8:30 Application of SAM-Modified Electrodes in the Study of Electron Transfer Properties of Carotenoids—*D. Liu, G. Gao, L. D. Kispert*
- 8:50 Factors Affecting the Stability of Carotenoid Radical Cations: Strength of Terminal Donor/Acceptor Group and Length of Olefin—*Y. Deng, G. Gao, L. D. Kispert*
- 9:10 Proposed Square Scheme Mechanism for Cobalt Cytochrome c Immobilized on Modified Gold Electrodes—*K. C. Stokes, E. F. Bowden*
- 9:30 The Role of the Gold Substrate in the Voltammetry of Cytochrome c Adsorbed on Self-Assembled Monolayers—*M. C. Leopold, J. A. Black, E. F. Bowden*
- 9:50 Intermission
- 10:10 Electron Transfer Kinetics of Yeast Cytochrome c Adsorbed on Mixed Alkanethiol Monolayers—*J. M. Wallace, E. F. Bowden*
- 10:30 Detection and Quantitation of DNA and RNA Using Disposable Electrochemical Sensors—*R. Sundseth, D. M. Thompson, H. Zhang, M. Wojciechowski, N. Naser, R. Henkens*
- 10:50 Intermittent Pulse Amperometry: A Faster and More Sensitive Method for Detection and Quantitation of Nucleic Acids—*M. Wojciechowski, F. Ebeling, N. Naser, R. Sundseth, D. M. Thompson, R. Henkens*
- 11:10 Synthesis of One-Dimensional Arrays of Au, Au/Poly(pyrrole), and Poly(pyrrole) Nanoparticles—*S. M. Marinakos, D. L. Feldheim*
- 11:30 Investigating the Kinetics and Mechanisms of Dopamine Neurotransmission using Fast Scan Cyclic Voltammetry—*J. Joseph, R. M. Wightman, R. R. Gainetdinov, M. G. Caron*

Session II: Thursday afternoon, 5 NOVEMBER 1998

PRESIDING: D. L. Feldheim

- 1:30 Electroless Patterning of Semiconductors for Microelectronics Applications—*L. A. Bottomley, P. Lillehei, H. Morales, J. L. Gole*
- 2:00 Electrochemical Formation of Epitaxial Compound Semiconductor Thin Films—*J. L. Stickney, T. L. Wade, B. H. Flowers, T. A. Sorenson*
- 2:30 Aerogels: A Nanoscale Platform to Integrate Materials for Electrochemistry—*D. R. Rolison, J. W. Long, M. L. Anderson, C. A. Morris, C. I. Merzbacher*

- 3:00 Intermission
- 3:20 Variable Gap Conjugated Polymers as Electrochromic and Electroluminescent Materials—J. R. Reynolds
- 3:50 Electrochemical Approaches for the Determination of Electron Transfer Rates in Metallodendrimers—C.B. Gorman, M. W. Hager, J. C. Smith
- 4:20 59. Electron Transfers at Monolayer-Protected Metal Clusters—R. W. Murray, S.-W. Chen, J. J. Pietron, R. S. Ingram, P. Wuelfing, S. J. Green, M. J. Hostetler

Session III: Friday morning, 6 NOVEMBER 1998

PRESIDING: E. F. Bowden

- 8:30 Chemically Gated Single Electron Tunneling in Ligand-Capped Gold Nanoclusters—D.L. Feldheim, L. C. Brousseau III
- 9:00 A New Way of Using AC Voltammetry to Study Redox Kinetics in Electroactive Monolayers. S. Creager, T. Wooster
- 9:30 AC Impedance Analysis of Supported Lipid Hybrid Bilayers on Gold Electrodes—H.O. Finklea, D. Brevnov
- 10:00--Intermission
- 10:20 Cytochrome c Oxidase in Lipid Bilayer Membranes on Gold Electrodes—M. C. Rhoten, F.M. Hawkrigde
- 10:50 Synthesis and Electrochemistry of Oligodeoxynucleotide-Anthraquinone Bioconjugates—J. Q. Chambers, N. Whittemore, A. Mullenix, V. Kertesz, D. Baker
- 11:20 Monitoring Neurotransmitters with Chemical Sensors—R.M. Wightman, D. Michael, E. Travis, S. Hochstetler

<http://www2.ncsu.edu/sermacs98/> is the official Web site for the 1998 ACS SOUTHEASTERN REGIONAL MEETING and includes information on the other 16 symposia and 28 general sessions as well as travel, lodging, registration, etc.

GORDON RESEARCH CONFERENCE ON ELECTROCHEMISTRY
17-22 January 1999
Doubletree Hotel; Ventura, California

For information, contact: James McIntyre [[mcintyreja\(at\)dow.com](mailto:mcintyreja(at)dow.com)]
Dow Chemical Company
Corporate R&D; 1776 Building
Midland, MI 48674-0001

*Sunday, 17 January 1999, 7:30 p.m.—**Electrochemistry & Living Systems***

Discussion Leader—Andrew Ewing (*Penn State University*)

Kathryn Bullock (*Medtronic*)—Bringing Galvani to Life: Enabling Electrical Therapies with Electrochemical Technologies

Guenter Gross (*University of North Texas*)—Nerve Cell Networks Growing on Microelectrode Arrays in Culture: Self-organization and Electrophysiological Dynamics

*Monday, 18 January 1999, 8:45 a.m.—***Conductive Polymers**

Discussion Leader: Andrew Gilicinski (*Air Products & Chemicals*)

John Reynolds (*University of Florida*)—Redox Switching of Conjugated and Electrically Conducting Polymers

Mark Lonergan (*University of Oregon*)—Electrochemical Tuning of Conjugated Polymer/Inorganic Semiconductor Interfaces

Patrick Kinlen (*Monsanto*)—Synthesis and Applications of Electroactive Polymers in Corrosion Protection and Active Molecule Delivery

*Monday, 18 January 1999, 7:30 p.m.—***Electrochemistry & Heterogeneous Catalysis**

Discussion Leader—Stephen Feldberg (*Brookhaven National Laboratory*)

Gerhard Ertl (*Fritz Haber Institute*)—Electrochemistry on Nanometer Scale

Wayne Goodman (*Texas A&M University*)—Metal Clusters on Oxide Supports: A Correlation of Structure, Electronic Properties, and Reactivity

*Tuesday, 19 January 1999, 8:45 a.m.—***Materials & Characterization Methods**

Discussion Leader—Jay Switzer (*University of Missouri-Rolla*)

Reginald Penner (*University of California, Irvine*)—Hybrid Electrochemical/Chemical Syntheses of Semiconductor Nanocrystals: An Expanded Role for Electrochemistry in Materials Synthesis

Charles Martin (*Colorado State University*)—Carbon Nanotubule Membranes

Eugene Smotkin (*Illinois Institute of Technology*)—Rational and Irrational Routes to Better Electrocatalysts

*Tuesday, 19 January 1999 7:30 p.m.—***Intramolecular Charge Transport**

Discussion Leader—Christopher Chidsey (*Stanford University*)

Jacqueline Barton (*California Institute of Technology*)—Charge Transport through Double Helical DNA

Paul Barbara (*University of Minnesota*)—Long Range Energy and Charge Transfer in Single Conjugated Polymer Molecules and Organized Thin Films

*Wednesday, 20 January 1999, 8:45 a.m.—***Batteries & Fuel Cells**

Discussion Leader—Shimson Gottesfeld (*Los Alamos National Laboratory*)

Victor Koch (*Covalent Associates*)—Advanced Electrolytes for Li-ion Batteries and Electrochemical Capacitors

Stephen Creager (*Clemson University*)—New Perfluorinated Ionomers for PEM Fuel Cells

David Wilkinson (*Ballard Power Systems*)—Fuel Cells, "A Down to Earth Electrochemical Solution", Present and Future Perspectives

*Wednesday, 20 January 1999, 7:30 p.m.—***Scanning Electrochemical Microscopy**

Discussion Leader—Daniel Buttry (*University of Wyoming*)

Allen Bard (*University of Texas*)—What's New in Scanning Electrochemical Microscopy?

Patrick Unwin (*University of Warwick*)—New Ultramicroelectrode Strategies for Probing Interfacial Processes

Thursday, 21 January 1999, 8:45 a.m.—**Charge Transport Through Thin Layers**

Discussion Leader—Johna Leddy (*University of Iowa*)

Fred Anson (*California Institute of Technology*)—Electrochemistry Within, Across, and at the Interface of Thin Layers of Immiscible Organic Solvents Interposed between Graphite Electrodes and Aqueous Solutions

Royce Murray (*University of North Carolina*)—Electrochemistry and Quantized Capacitance Charging of Monolayer-Protected Metal Clusters

Thursday, 21 January 1999, 7:00 p.m.—**Open Session**

Discussion Leader—Neal Armstrong, Vice-Chair (*University of Arizona*)

From the (E-)Mailbag

—**Further comments from the membership re: (1) the SEAC home page and (2) notification to members of new info on the website—**

In message Sat, 13 Jun 1998 12:01:24 -0500, Alex Scheeline writes:

Thought: I find that one of the benefits of hard copy is that something tangible shows up which can be read. I have one electronic subscription, and I find I fail to actually use it. When the SEAC Newsletter goes all-electronic, could there be an e-mailed broadside, "New SEAC Newsletter available at [www.address]?" That way, when it's available, a simple double click will bring it into view. Setting this up may be a bit of work, but thereafter, it's 15 seconds additional work each issue for Our Esteemed Editor and increases the likelihood the bloomin' thing gets read by an order of magnitude.

Alex Scheeline
Department of Chemistry; 600 S. Mathews Ave.
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Urbana, IL 61801
[scheelin\(at\)aries.scs.uiuc.edu](mailto:scheelin(at)aries.scs.uiuc.edu)

In message Wed, 17 Jun 1998 15:48:34 -0500, Fred Stover writes:

Hello Debra—I read with great interest the latest, and nearly the last, *SEAC Communications* newsletter concerning the move to an electronic version. One suggestion: would it be possible to e-mail members alerting them when a new "issue" of SEAC news is available on the website? (Or, if there are no longer to be "issues" per se, a notice might be sent when enough new material is posted there).

The reason I'm suggesting this is that I'm afraid that, without some prompting, I might forget to check the website on a timely basis. I like to keep up with the comings and goings of the electroanalytical community, but about the only electrochemistry I do these days is push a few ions around in a capillary, or measure the conductance of neutralized solutions eluting from ion-exchange columns. (Oh yeah, almost forgot...I frequently measure the activity of protons in solution using a glass membrane tipped sensor—I guess I'm not THAT far removed from electrochemistry, after all!). Anyway, it's just a suggestion that you might provide reminders to your erstwhile readership to check the site.

I also see on the Web that you are the person to whom we should send updated membership info. I'm not sure what all you need, but I do have a change to my mailing address (see below). Please pass this along for the membership update. Say hi to any late-70's Tar Heels you may stumble across, and keep up the good work!

Frederick S. Stover
Solutia Inc.
10300 Olive Blvd.; PO Box 66760
St. Louis, MO 63166-6760
[fsstov\(at\)solutia.com](mailto:fsstov(at)solutia.com)

—Thanks for the feedback, gentlemen...actually, I ran a trial e-notification for the last issue of SEAC Communications (using my personal list of electrochemical e-addresses)...now that I have your e-addresses, you, too, will get an electronic update of new information as it appears on the SEAC website...and as SEAC's Grand Secretarial Poohbah (Andy Ewing) updates the master SEAC membership listing, all SEAC members who are electronically listed (and make such known to us) will indeed be e-notified (...and it's been ages, Fred—great to hear from you!)—

—Electrons worldwide—

In message Thu, 18 Jun 1998 18:11:28 -0400, Hans Grande writes:

CIDETEC is a new Center devoted to Research and Development in Electrochemistry, placed in San Sebastian (Spain). Our address is: CIDETEC

Po. Mikeletegi 61,1
20009 San Sebastian
SPAIN

Telephone: 34-943-309022

FAX: 34-943-309136

E-mail: [tcidetec\(at\)sarenet.es](mailto:tcidetec(at)sarenet.es)

Contact person: Dr. H. Grande

We would like to know if it would be possible to include our address in your scientific database, so that we can receive all kind of information related to publications, meetings, symposia and other events organized by the SEAC.

Thank you very much in advance. I remain, Sincerely yours.

Hans Grande

—So entered by our Webmeister, Sam Kounaves on the SEAC website. SEAC Surfers: consider yourself alerted to cooperative opportunities in Spain!!—

—Out of the mouths of babes...—

In message Thu, 18 Jun 1998 10:23:53 -0700, Bryan Balazs writes:

Hi Debra—I don't know how easy this will be to do, but could you (or whoever is appropriate) change my mailing address for *SEAC Communications* from "Mail Code L-370" to "Mail Code L-092"? The rest of the address remains unchanged. Thanks!

Bryan Balazs
Lawrence Livermore National Laboratory
Livermore, CA 94550
balazs1@llnl.gov

In message Thu, 18 Jun 1998 15:36:54 -0400, Debra Rolison writes:

Hi, Bryan—we should have the technology! You are now entered into my e-list (which means you will get an e-notice next time the newsletter is posted on the website) and I've forwarded this to our Grand Poohbah Secretary, Andy Ewing ([age\(at\)psu.edu](mailto:age(at)psu.edu)), master of the master address list. It may work!

May I run your update (and especially your ending quote from the student) in the next issue of the newsletter?? let me know. Thanks.

Debra Rolison
[rolison\(at\)nrl.navy.mil](mailto:rolison(at)nrl.navy.mil)

In message Thu, 18 Jun 1998 12:58:50 -0700, Bryan Balazs writes:

Thanks, Debra! Certainly seems like you folks are on top of things on that end. You are welcome to use any part of my e-mail(s) or the signature footer at the bottom. I came across that quote and thought it was classic. ...Out of the mouths of babes...

"To most people, solutions are answers. But to chemists, solutions are things that are still all mixed up."—a fifth-grade student

Say Hello to Dave Blauch for me if you ever e-mail/talk with him; he and I overlapped at Caltech by 3-4 years. Cheers, Bryan

—Yo, Dave! ([dablauch\(at\)davidson.edu](mailto:dablauch(at)davidson.edu)) ... looks like it's time for a Caltech reunion!—

—All things faradaic...—

In message Tue, 22 Sep 1998 13:35:04 -0400, Dave Curran writes:

Debra— Once again, the occasion of Faraday's birthday is with us.

Dave Curran
Department of Chemistry
University of Massachusetts
Amherst, MA 01003
[curran\(at\)chem.umass.edu](mailto:curran(at)chem.umass.edu)

—...and many happy returns to electrochemists everywhere!—

Check It Out!

Dick Crooks ([crooks\(at\)tamu.edu](mailto:crooks(at)tamu.edu))—and more to the point, his totally excellent assistant, Kelly Walker ([walker\(at\)mail.chem.tamu.edu](mailto:walker(at)mail.chem.tamu.edu))—have alerted us to the following item of general interest to the electroanalytical sensing community:

You can now access a final copy of the 2nd NSF Sponsored Workshop on Chemical Sensors at the following web address: <http://www.chem.tamu.edu/walker/chemsensors.html> (Note: this is a case-sensitive address!)

For your convenience, you will be able to download a PDF copy of the report from this site.

—Enjoy!—

Reminders to the SEAC Members

—Join us!—

SEAC's Membership Chairman, SUSAN LUNTE [Department of Pharmaceutical Chemistry; 2095 Constant Avenue, University of Kansas, Lawrence, KS 66047, USA] will now receive all NEW MEMBERSHIP APPLICATIONS and INITIAL DUES PAYMENTS. Any new members recruited by current members should send their completed applications directly to Susan.

—Join us to honor SEAC's 1999 Award Winners!—

Reilley Award Dinner Reservations—The Latest from Craig Bruntlett, Activities Chairman

'Tis the season we need to be planning some of the social events affiliated with our Reilley and Young Investigator Awards' Symposium at Pittcon®'99 honoring Janet Osteryoung and Dan Feldheim. After last year's ceremonies, some colleagues were asking what determined who could or could not attend a post-reception dinner? I will paraphrase what President Wightman said in the last newsletter: *the requirements are simple; tell us you want to attend and be ready to pay big bucks for marginal food!* The benefit is that you will have the opportunity to hobnob with some interesting and fun people in a setting in which you may not normally see them.

So that we can get a room of the appropriate size *and* order the over-priced food, we need to know how many people would be interested in attending the dinner. At this point we don't know the cost, but if history is a measure it will likely be in the \$50-\$75 range. If you are (still) interested in attending a Reilley Award dinner please e-mail your name and how many dinners you wish to reserve to: craig@bioanalytical.com. Please respond by 1 February 1999.

—SEAC Officers—

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Dennis Tallman

1998-2003

Richard Baldwin
Susan Lunte
Marc Porter