Division of Nuclear Chemistry and Technology
American Chemical Society

DNCT WWW Home Page – http://www.cofc.edu/~nuclear

NEWSLETTER
JANUARY 2005

Newsletter Editor: Paul Mantica
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Topics

ELECTION RESULTS

New division officers have been elected for the terms indicated:

Heino Nitsche (University of California at Berkeley)
Vice-Chair Elect 2005 (will become Chair in 2007).

W. Frank Kinard (College of Charleston)
Secretary 2005 – 2007.

Leonard Mausner (Brookhaven National Laboratory)
Treasurer 2005 – 2007.

Joseph Peterson (University of Tennessee)
Councilor 2005 – 2007.

The roster of Division officers is listed down the left edge of this page, and is also available at
http://www.cofc.edu/~nuclear/officers.html
Please refer to this roster whenever you wish to contact one of the division officers.

MESSAGES FROM DIVISION OFFICERS

Outgoing Chair – Dave Morrissey

As I hand over the duties of the chairperson of our division to Kim Thomas I would like to say thanks to Frank Kinard and Sherry Yennello for their help as division officers and to our councilor Joe Peterson. Last year was a year of change for the division and one of belt-tightening. On a bright note, the Summer Schools continue to do well and produce excellently trained students. The success of the summer schools was noted in the NSAC report on education and the report encourages us to consider adding a third site (see the report on NSAC activities in this newsletter).

During the last year the Division took over funding the Seaborg Award since we are far short of the necessary funds for the endowment. One of the tasks for the coming year is to formalize the future status of the award with the ACS. The Division will have to prepare a formal proposal at the San Diego national meeting that will be acted on during the summer by the ACS. The Division had strong symposia at the Anaheim and Philadelphia meetings, a highlight being the presentations by all the graduate students organized by Paul Duval and Dave Robertson. It was fun to see lots of young people excited about their work and the extremely broad range of topics that they are working on. Several of the students commented on how surprised they were by the variety of things that make up nuclear and radiochemistry.

Incoming Chair – Kim Thomas

While I didn't officially assume the chair of this Division until the new year, I have certainly been learning by "fire" in getting the agendas and arrangements underway for San Diego. The job of 2005 Program Chair started almost a year ago and I got into the loop a bit out of sync compared to what I believe would be better timing. The good news is our next chair, Dave Robertson, got in at the right time (he and I attended the same P2C2 conference) and hopefully, he will learn from my mistakes! We have a solid program for San Diego although a couple of the original symposia didn't materialize and one ended up much shorter than we first had hoped. We had an organizer (Anne Kertsting) step right up to add a new symposium and we made a swap with the Washington, DC agenda to ensure exciting programs for both meetings. I hope you each will do your part to solicit participation in our symposia for the upcoming national meetings; our Division derives direct benefit from national ACS registrations that list our Division as the technical program of interest so don't forget to include us when you sign up for San Diego and Washington, DC.

Speaking of San Diego, I want to congratulate Luciano Moretto, the winner of the 2005 Glenn T. Seaborg Nuclear Chemistry Award. Larry Phair has organized an exceptional symposium in honor of this award and recipient that will run from Sunday to Tuesday. I hope to see many of you there. The abstracts will be posted on our website so if you want a hard copy, print them from there. There will be only a very limited supply of hard copies available at the conference site.

And now, speaking of the Seaborg Award in Nuclear Chemistry, we have a serious financial challenge ahead of us. The Division must decide whether or not and then how to continue the Glenn T. Seaborg Award in Nuclear Chemistry. We have not come up with the several hundred thousand dollar endowment (in the neighborhood of $300k) required by the ACS for permanent, named national awards. However, the ACS allowed the award to continue its national status for the past several years and the Division funded it out of our treasury each of these years. However, by August 2005, we will

have to notify ACS of our intentions as to the future of this award. The costs will soon be pushing $7-8k per year. This issue will be a major topic at the San Diego business meeting. If you have thoughts or ideas about this, please don't wait for the meeting, send them directly to any (preferably, all) of the DNCT officers so we can formulate some concrete alternatives before we meet in San Diego.

I strongly recommend that any of you with an interest in the future of our field, check out the NSAC report just issued "Education in Nuclear Science" available at

http://www.sc.doe.gov/production/henp/np/nsac/nsac.html

It recommends "the establishment of a third summer school for nuclear chemistry, modeled largely after the two existing schools." It also calls for DOE and the NSF to create a Center for Nuclear Science Outreach and that the nuclear science community work to increase the number of new Ph.D.'s in nuclear science by approximately 20% over the next 5-10 years.

We are looking forward to selecting the next head of the Summer Schools in Nuclear and Radiochemistry and preparing the proposal for the next 5 years of this productive program. If we receive a proposal for a third summer school, this will be an even bigger task! This will be another important business item for San Diego.

Please check out the programming for our upcoming meetings. I hope to see many of you at one (or both!) of our 2005 programs. Meanwhile, encourage your colleagues to consider joining our Division. Many people have entered the field of nuclear and radiochemistry through different channels and may not be aware of our Division and its benefits. We'd go a long way toward some of our financial challenges if each one of us made it a personal goal to enlist one new Division member this year. Let's spread the word about our Division and welcome new colleagues from across the Chemical community!

Councilor – Joe Peterson

I would like to thank the DNCT membership for re-electing me their Councilor for my previously announced final term of service, 2005-2007. ACS President Bill Carroll has appointed me Chair of the Council Committee on Membership Affairs (MAC) for 2005, so I will have many additional duties outside of my DNCT representation on Council. DNCT members should let me know directly (joepete@utk.edu) if they have concerns about their ACS membership that MAC should address. MAC is particularly focused on membership recruitment, retention, and recognition, personal member benefits (those outside of professional benefits, such as travel, insurance, financial, car rental, etc.), virtual member services (http://ACS.org), and welcoming/growing membership diversity and multidisciplinarity.

I am thankful for this new opportunity and challenge to broaden my service to the ACS and welcome the added stimulation and demands that it will certainly bring. To all our DNCT members and affiliates, HAPPY NEW YEAR and best wishes for a safe, healthy, productive, and memorable 2005!

Please give your support to the incoming DNCT Executive Committee and consider volunteering to serve on one of the divisional committees.

SAN DIEGO ACS MEETING PROGRAM - Kim Thomas

The 229th ACS National Meeting will be held in San Diego, CA March 13- 17, 2005. The Division has five symposium scheduled over the five-day meeting period. The preliminary technical program is available:

http://oasys2.confex.com/acs/229nm/techprogram/

and selecting the Division of Nuclear Chemistry and Technology link in the right column listing.

Housing reservations and meeting registration can be completed through the ACS website:

http://www.chemistry.org

The housing deadline is February 21, 2005. Early registration deadline is February 14, 2005.

Glenn T. Seaborg Award Symposium in Honor of Luciano Moretto

Larry Phair (lwphair@lbl.gov)

Transport Behavior of Actinides and Fission Products in the Subsurface

Annie Kersting (kersting1@llnl.gov)
Mavirik Zavarin (zavarin1@llnl.gov)

Isotope Production Techniques

Wolfgang Runde, (runde@lanl.gov)

Advances in Nuclear Analytical Chemistry

Charles Coleman
(charles02.coleman@srs.gov)

Additional Aspects of Nuclear and Radiochemistry

Kim Thomas (kwthomas@lanl.gov)

In addition, the DNCT is co-sponsoring the following symposia at San Diego:

Chemical Safety Issues for Radiation Work
(co-sponsored with CHAS)

Carol Lentz

Lanthanides and Actinides
(co-sponsored with INOR)

John A. Belot (jbelot2@unl.edu)
Debbie C. Crans

FUTURE ACS NATIONAL MEETINGS

Division members who would like to organize a symposium at an upcoming ACS National Meeting should contact the appropriate program chair.

Program Chair for 2005: Kim W. Thomas (kwthomas@lanl.gov)

Washington, DC, August 28-Sept 1, 2005

Applied Modeling and Computations in Nuclear Chemistry

http://www.cofc.edu/~nuclear/2005WashingtonComputationSymposium.pdf

Thomas M Semkow, Wadsworth Center, New York State Department of Health and SUNY, PO Box 509, Albany, NY 12201, tms15@health.state.ny.us

Nuclear Technology Applications

Dana Christensen, Lawrence Livermore National Laboratory, 7000 East Ave., Livermore, CA 94550, dchristensen@llnl.gov

Ken Czerwinski, Department of Chemistry, University of Nevada – Las Vegas, 4505 Maryland Parkway, Box 454003, Las Vegas, NV 89154-4003, czerwin2@unlv.nevada.edu

Low-Activity Waste Issues

John Wiley, The National Academies, 500 5th Street, NW, 6th Floor Washington, DC 20001, jwiley@nas.edu

Nuclear Forensics

http://www.cofc.edu/~nuclear/2005WashNuclearForensicsSymposium.pdf

Ken Moody, Analytical and Nuclear Chemistry Division, Lawrence Livermore National Laboratory, 7000 East Ave., Livermore, CA 94550, moody3@llnl.gov

Martine Duff, Savannah River Technology Center, Westinghouse Savannah River Company, Aiken, SC 29808, martine.duff@srs.gov

Stephan Vogt, IAEA Safeguards Laboratory, Department of Nuclear Sciences and Applications, s.vogt@iaea.org

Neutron-Based Analytical Techniques
(co-sponsored with ANAL)

Lee Magid, Program Director/Special Projects, Division of Chemistry, National Science Foundation, 4201 Wilson Boulevard, Suite 1055, Arlington, VA 22230, lmagid@utk.edu

Sensors and Instrumentation for Counterterrorism (IV): Detection of NUC/RAD Materials
(co-sponsored with ANAL)

D.E. Hobart, Actinide Analytical Chemistry, Los Alamos National Laboratory, MS-G740, Los Alamos, NM 87545, dhobart@lanl.gov

Additional Aspects of Nuclear and Radiochemistry

Kim Thomas, Chemistry Division, Mail Stop J515, Los Alamos National Laboratory Los Alamos, NM 87545, kwthomas@lanl.gov

An additional symposium offered in Washington that may be of interest to division members:

Separations for Consequence Management
(sponsored by IEC)

This symposium will provide a focus for discussing the role of separation science and technology in mitigating the effects of and recovering from an attack by a radiological dispersive device (RDD) or a nuclear weapon. Topical areas of interest include: separation of analytes from contaminated forensic evidence, decontamination of various urban surfaces, and decontamination of contaminated water supplies and aquatic systems.

Gregg J. Lumetta, Radiochemical Science and Engineering Group, Pacific Northwest National Laboratory, P.O. Box 999; MSIN P7-22, Richland, WA 99352, gregg.lumetta@pnl.gov

Tammy Taylor, Los Alamos National Laboratory, P.O. Box 1663, MS J514, Los Alamos, NM 87545, taylort@lanl.gov

Program Chair for 2006: Dave Robertson (robertsonjo@missouri.edu)

Suggestions for symposia to be held at the Atlanta, GA and San Francisco, CA are welcomed and should be sent to J. David Robertson (robertsonjo@missouri.edu)

Atlanta, GA, March 26 – 20, 2006

Meeting the Diverse Needs of the 21st Century Nuclear Science Workforce: A Symposium by Graduate Student Researchers in Nuclear Chemistry

Susan Lever, Department of Chemistry, University of Missouri, Columbia, MO 65211, levers@missouri.edu

Paul Mantica, Department of Chemistry, Michigan State University, E. Lansing, MI 48824, mantica@msu.edu

San Francisco, CA, September 10 – 14, 2006

PACIFICHEM 2005 – Suresh Srivastava

The PACIFICHEM 2005 will be held in Honolulu, Hawaii during December 15-20, 2005. DNCT symposia that have been accepted at PACIFICHEM 2005 are:

Science with Rare Isotope Beams (#238)

Betty Tsang*, John D'Auria, Ming Chung Chu, Mahananda Dasgupta, Hisaaki Kudo

Frontiers of Nuclear Chemistry in the Heaviest Elements (#244)

N. Agame*, Japan, Heino Nitsche, Yong Hee Chung, Yuling Zhao

Chemistry of Molecular Imaging (# 260)

M.J. Welch*, H. Van Brocklin, T. Ruth, M. Adam, J. Valliant, Y. Fujibayashi, S. Smith, Y. Choe

Heavy-Element Chemistry in the New Century: Interplay of Computational Modeling and Experiment (#264)

Bert de Jong*, H. Georg Schreckenbach, Takahito Nakajima, Jun Li

Advances in the Chemistry of Targeted Radionuclide Therapy (#272)

D Scott Wilbur*, Michael Adam, Barry Allen, Yasushi Arano

Actinides and the Environment: A Paradigm for InterdisciplinaryResearch (# 306)

H. Nitsche*, Z. Yoshida, W. Kim, A.J. Francis

*Corresponding Symposium Organizer

Information on abstract submission is on the following web site:

http://www.pacifichem.org/c_abstracts/

This page lists all symposia and symposium organizers by technical area. The DNCT symposia are listed under the Inorganic Chemistry subject area. Click on a symposium title to view a short summary of the symposium. Anyone wishing more detailed information on a particular symposium should contact the Corresponding Symposium Organizer, whose e-mail address is provided. Each symposium carries a reference number, which should be used in any correspondence with the congress organizers.

All delegates wishing to present a paper (invited or contributed, oral or poster) must submit an abstract online. Electronic abstract submission opened on January 17, 2005 and will close April 13, 2005. Late submissions will not be accepted. Please be sure to read the guidelines for using the abstract submission system.

INTERNATIONAL SYMPOSIUM ON RADIOPHARMACEUTICAL CHEMISTRY

The 16th International Symposium on Radiopharmaceutical Chemistry, sponsored by the Society of Radiopharmaceutical Sciences, will be held from June 24 – 28, 2005 in Iowa City, Iowa. The meeting covers all aspects of radiopharmaceutical chemistry, from radionuclide production and synthesis of radiotracers to evaluation of the compounds in vivo. The meeting will include plenary session where outside experts in areas of interest will talk to us about their field, scientific sessions with submitted papers covering all aspects of the field, workshops that cover technical aspects of problems of current interest and poster sessions for all. The proceedings of the meeting are published as a supplement by the Journal of Labeled Compounds and Radiopharmaceuticals.

Student bursaries covering travel, accommodation and registration are available for graduate students and post-docs who are interested in entering the field. Complete details of the meeting are available at:

http://www.radiology.uiowa.edu/ISRC2005

NEWS FROM NSAC – Dave Morrissey

Since my summary in the last newsletter, the Nuclear Science Advisory Committee met in November 2004, to receive the report from the subcommittee chaired by Joe Cerny (U.C., Berkeley) on the status of education in nuclear science. The subcommittee was charged to identify key strategies for educating future nuclear scientists and to project the needs for future nuclear scientists. There is a wealth of data in the report and a number of recommendations for the future. The discussion of the report by NSAC was very lively because, as you must know, everyone on NSAC is involved in education. The complete report is available on the NSAC website hosted by the DoE under the heading of "Recent NSAC Activities":

http://www.sc.doe.gov/henp/np/nsac/nsac.html

The subcommittee's work extended over a period of more that a year and a half with a key feature being extensive web surveys of undergraduates, graduate students, post docs, and young scientists (5-10 years post-Ph.D.). The surveys had very high response rates and the group amassed a large amount of data. Their analysis and some of the data is presented in the report. The report concludes that improved science education at the K-12 level is critical and that enhanced outreach is needed to build an improved public awareness of the many issues that nuclear scientists work on for the public good. In fact, the report places the highest priority on public outreach efforts, as well as efforts to modestly increase the rate of Ph.D. production in nuclear science, and the importance of reducing the median time to obtain the Ph.D. degree. [I am personally very concerned with the fact that the average time to degree in nuclear science is seven years. This is a remarkably large number especially because most students take a post doc (itself averaging three years) before starting on a career-track job.] The report also encourages developing an increased awareness during graduate school of the wide variety of career paths in our field.

As part of the committee's discussion of Undergraduate Education, they highlight the success of the Nuclear and Radiochemistry Summer Schools. Noting that essentially all of the students go on to post-baccalaureate training and that 70% of the students go on to pursue Ph.D. degrees in Chemistry or Physics. Given the current extremely low rate of nuclear chemistry degrees per year (~10 / year) the impact of the summer schools cannot be underestimated. The subcommittee noted

that the funding for these summer schools comes from DOE Basic Energy Sciences and the Office of Biological and Environmental Science but not DOE or NSF nuclear physics programs. They recommend creation of a third summer school and my reading between the lines suggests that our division should work to obtain funds for a third site from other sources.

There are many, many other details in the 157 page report and I strongly suggest that you take the time to read it. I would like to personally thank the subcommittee and commended them for the large effort that they put into this project and for the excellent report that they produced.

SUMMER SCHOOL REPORT

The ACS Summer Schools in Nuclear and Radiochemistry, funded by the U.S. Department of Energy and held at San Jose State University (21st year) and Brookhaven National Lab (16th year), offer upper division undergraduates an opportunity to complete coursework on this topic through ACS accredited chemistry degree programs at San Jose State University or the State University of New York at Stony Brook. Applications for the 2005 Summer Schools are currently being accepted (**deadline extended to March 1, 2005).** Application forms and other information can be found at the DNCT website:

http://www.cofc.edu/~nuclear/nukess.html

Applicant qualifications are given below:

Required Qualifications:
· Students should have completed at least two years of chemistry, one year of physics, and one year of calculus.
· Applicants must be U.S. citizens or resident aliens.

Preferred Qualifications:
· Undergraduates
· Preferably chemistry, biochemistry, physics, or engineering majors. Students from disciplines are encouraged to apply if they have sufficient background in chemistry, physics, and calculus.
· One semester of physical chemistry.
· Candidates should be entering their junior or senior year in the fall of 2005, and ideally will not graduate prior to May, 2006.

Student participants are selected from the applicant pool by a committee of distinguished DNCT members. Awards are strictly merit based using the qualifications given above. In addition, preference is given to students from institutions having limited curricular opportunities for nuclear and radiochemistry. Participants typically represent all parts of the US.

The number of students is limited to 12 at each site, and the course includes both lecture and laboratory work on the fundamentals and applications of nuclear and radiochemistry. The Summer Schools are very challenging and intensive, with low student-to-instructor ratios. To broaden the students' perspective, prominent research scientists who are active in nuclear and/or radiochemical research participate in a Guest Lecture Series. A week long symposium emphasizing nuclear medicine is conducted as a part of the program.

Starting in 2002, DOE provided an increase in funding as recognition of the success of the program. Over a two-year period starting in 2002, DOE increased funding for the Summer School program by 35%. The increases have been used to award $3,000 stipends to students who successfully complete the program, and to enhance the curriculum at each site. For the 2003 Summer Schools, seventy-five percent of the funding comes from the Office of Science's Basic Energy Science (BES) Program, which has supported the Summer Schools since their inception. The other twenty-five percent of the total funding (and the recent

increases in funding) comes from the Office of Science's Basic Environmental & Biological Research (BER). This office is the part of the DOE Office of Science that supports research and development in nuclear medicine and radiopharmaceuticals. Most of the curriculum enhancement activities have focused on this aspects of nuclear and radiochemistry.

Jill Pinter of the Hope College (MI) from the BNL school and Jason Seifert of Reed College (OR) from the SJSU school were named as the "Outstanding Students" in the 2004 summer schools. These students have been invited to attend the 2004 San Diego Spring National meeting of the American Chemical Society with expenses paid. They will be recognized for this accomplishment at the DNCT business meeting in San Diego.

The Summer Schools are only successful because of the commitment and leadership that is exercised by the people involved. At BNL, these people are Dr. Kathy Kolsky, Site Director. At SJSU, Prof. Herb Silber is the Site Director at SJSU and Frank Kinard is the Lead Instructor. These individuals also rely on the willingness of other members of the DNCT to participate in the program by giving seminars and short lectures. If you have an opportunity to thank them for their efforts, please do so, as their efforts are crucial to the success of the program. The increases in funding have placed an additional load on the DNCT Treasurer, as the funds are administered through the DNCT treasury. All of us involved in the Summer Schools have appreciated Sherry Yennello's willingness to accept the extra work.

For additional information about the Summer Schools, please contact Prof. Sue Clark (Phone: 509-335-1411; FAX: 509-335-8867; email: s_clark@wsu.edu) or Prof. Ken Nash (Phone: 509-335-2654 ; FAX: 509-335-8867; email: knash@wsu.edu), National co-Directors, Department of Chemistry, Washington State University, Pullman, WA 99164-4630.