Chair, 2006
Program Chair, 2006
J. DAVID ROBERTSON
Department of Chemistry
University of Missouri
Columbia, MO 65211-0001
Phone: (573) 882-2240
robertsonjo@missouri.edu

Chair-Elect, 2006
Program Chair, 2007
HEINO NITSCHE
Department of Chemistry
University of California at Berkeley
Berkeley, CA 94720-1460
Phone: (510) 486-5615
hnitsche@lbl.gov

Vice-Chair, 2006
Program Chair, 2008
ROY A. LACEY
Chemistry Department
SUNY – Stony Brook
Stony Brook, NY 11794-3400
Phone: (631) 632-7955
roy.lacey@sunysb.edu

Secretary, 2005-2007
W. FRANK KINARD
Dept. of Chemistry and Biochemistry
College of Charleston
Charleston, SC 29424
Phone: (843) 953-5587
kinardf@cofc.edu

Treasurer, 2005-2007
LEONARD MAUSNER
Medical Department
Brookhaven National Laboratory
Upton, NY 11973
Phone: (631) 344-4457
lmausner@bnl.gov

Councilor
JOSEPH R. PETERSON, 2005-2007
joepete@utk.edu

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STEVEN W. YATES, 2004-2006

Division of Nuclear Chemistry and Technology
American Chemical Society

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

NEWSLETTER
JULY 2006

Newsletter Editor: Lætitia Delmau
Email: dnctnews-letter@yahoo.com

Topics

FROM THE CHAIR – J. David Robertson

In keeping with the rich tradition of our field, the Archaeological Chemistry symposium at the ACS meeting in Atlanta attracted many individuals from outside of our division and the symposium was highlighted in a four-page article in the April 24th issue of C&E News along with a byline on the cover. The papers presented in the symposium will be published in an ACS Symposium Series volume entitled "Archaeological Chemistry: Analytical Technique and Archaeological Interpretation." Also, as noted in our last newsletter, many of the participants in the Atlanta symposium "21st Century Radiochemistry Opportunities: A Symposium Highlighting Nuclear Science Workforce Needs" gave us permission to post their presentations on the Division website. These presentations provide excellent overviews of many of the exciting research programs in nuclear and radiochemistry today. They are now available at http://www.cofc.edu/~nuclear.

The program for the 232nd National ACS meeting in San Francisco is in place and may be viewed at http://oasys.acs.org/acs/232nm/techprogram. Several of the symposia are included in the new, multidisciplinary programming for the meeting in the areas of nanotechnology; drug discovery; and safety, health and the environment. I look forward to seeing many of you in September!

ACS FALL MEETING- San Francisco

San Francisco, CA, Sept. 10 – 14, 2006

f Element Separations

sponsored by I&EC, co-sponsored by DNCT
Ken Nash (knash@wsu.edu), Dale Ensor and Bill Crooks.

30 years of Projectile Fragmentation

David Morrissey (morrissey@nscl.msu.edu)

Analytical Chemistry in Nuclear Technology

Charles Coleman, SRNL, Aiken, SC (charles02.coleman@srnl.doe.gov), Dave Hobart (dhobart@lanl.gov) and David Hobbs (David.Hobbs@srnl.doe.gov)

54 oral papers will be presented in the annual symposium Analytical Chemistry in Nuclear Technology at the National ACS meeting in San Francisco, September 10-14, 2006. The 2006 symposium will consist of seven half-day sessions in four focused technical areas:

- Developments in Radiochemistry and Nuclear Counting Techniques (2 half-day sessions)
Organized by Lav Tandon, Los Alamos National Laboratory

- Innovative Techniques for Supporting Nuclear Waste Processing and Environmental Monitoring (2 half-day sessions)
Co-organized by Bruce Kaiser and Aruna Arakali, Bechtel National Inc., River Protection Project-Waste Treatment Plant; Marsha Lambregts, Idaho National Laboratory; Kristine Zeigler and Steven Serkiz, Savannah River National Laboratory

- Advances in Vibrational Spectroscopy-Based Sensors
Organized by Scott McWhorter, Savannah River National Laboratory

- Bioremediation in Nuclear Environments (2 half-day sessions)
Co-organized by Amy Ekechukwu and Charles Turick, Savannah River National Laboratory

We have the honor of having the 2006 symposium kicked off by Dr. Albert Ghiorso of the Lawrence Berkeley National Laboratory who will present a Plenary Lecture entitled: "Cold War Era Applications of Nuclear Forensics".

Investing in the Future: Radiochemistry Education Award Program

Michael G. Schmidt, Office of Special Programs, Medical University of South Carolina, schmidtm@musc.edu

Radioisotopes for Microbatteries and MEMS

Amy Duwel, Charles Stark Draper Laboratory, Inc., 555 Wilson Boulevard, Suite 501, Arlington, VA 22209, ADuwel@draper.com

Chemistry of Imaging Agents

Silvia Jurisson, University of Missouri, 601 South College Avenue, Columbia, MO 65211, JurissonS@missouri.edu, Martin W. Brechbiel,, NIH martinwb@mail.nih.gov

ELECTIONS- J. David Robertson

In accordance with Bylaw III of the Division, the Nominating Committee has developed a list of candidates for the office of Vice-Chair Elect (2007) and for the member-at-large for the Executive Committee (2007-2009). The candidates have provided the following short biographies and the ballots for the election will be distributed to the Division in August.

Candidates for Vice-Chair Elect (2007)

Mark Stoyer
Obtained a BS in Chemistry from Purdue University in December, 1984. Worked as Undergraduate Research Assistant at LLNL Jan. 1985-Aug. 1985. Obtained PhD in Chemistry (Nuclear) from University of California, Berkeley in November, 1990. Held Post-doctoral research positions at Lawrence Livermore National Laboratory (LLNL) 1991-1993 and at Lawrence Berkeley Laboratory (LBL) 1993-1995. Staff scientist at LLNL 1995-present. Senior staff scientist at LLNL from 2003-present. Visiting professor in Chemistry Dept. at Univ. of Maryland from July 2003-present. Member of the American Chemical Society (ACS) 1999-present, member of the Division of Nuclear Chemistry and Technology ACS 1986-present, member of the American Physical Society 1990-present, and member of the American Association for the Advancement of Science 1999-present. Current research interests are varied and include: heavy and superheavy element research, inertial confinement fusion (NIF and OMEGA), radioactive ion beams, radiochemical diagnostics and cross-section measurements for Stockpile Stewardship Program, nuclear structure physics, γ-ray and conversion electron spectroscopy, actinide target preparation and chemistry, high-spin physics, nuclear reaction mechanisms, superdeformation, heavy-ion proton and neutron transfer reactions (theory and experiment), rotational population theory, Gammasphere experiments, GEANIE and neutron physics at LANSCE.

Charles Coleman
Charles J. Coleman, is a Senior Fellow Scientist at the Savannah River National Laboratory in Aiken, South Carolina. Charles joined Savannah River shortly after receiving his Ph.D. degree in Inorganic Chemistry at the University of South Carolina in 1978. Since 2000, he has helped to organize the annual symposium Analytical Chemistry in Nuclear Technology that contributes to the technical program of the Division of Nuclear Chemistry and Technology National Meetings of the American Chemical Society.

Candidates for Member-at-Large of the Executive Committee (2007-2009)

Dave Morrissey
Michigan State University, b. 1953; (morrissey@nscl.msu.edu). B.S. with distinction, Chemistry, Pennsylvania State University; Ph.D., Nuclear Chemistry, University of California, Berkeley, 1978; Research Fellow, Lawrence Berkeley Laboratory, 1978-81; Assistant,/Associate /Professor of Chemistry and National Superconducting Cyclotron Laboratory, 1981-present; Guest Scientist, Gesellschaft fuer Schwerionenforschung, Darmstadt, Germany, 1987-88; Associate Director for Nuclear Science, NSCL, 1995-9; Distinguished Faculty, College of Natural Science, MSU, 1997,8; University Distinguished Professor, 2005; Member: ACS, APS, Sigma Xi, Phi Lambda Upsilon; Chair of Division of Nuclear Chemistry & Technology, 2004; Organized DNCT symposia, APS-Division of Nuclear Physics workshops and Fall/2002 meeting, international topical workshops and conferences; Research interests: production and study of nuclei at the limits of stability, mechanism and application of projectile fragmentation, beta-delayed neutron TOF spectroscopy; Publications: 149 refereed articles, 83 conference proceedings, 84 invited talks and seminars.

Dave Hobart

born 1949, BA, chemistry, 1971 Rollins College, Winter Park, FL; United States Air Force, Strategic Air Command, SR-71 Blackbird reconnaissance aircraft avionics (1971-1975); PhD, analytical chemistry, 1981, University of Tennessee, Knoxville, 1981. UT-K/Oak Ridge National Laboratory, Postdoctoral Research Associate (1981-1983). Los Alamos National Laboratory, NM, Staff Member, Isotope and Nuclear Chemistry Division; Principal Investigator for U.S. DOE Programs, "Actinides in Near-Neutral Solutions;" and Yucca Mountain Nuclear Waste Repository Project "Solubility Measurement and Speciation Task;" Expert Panel for Waste Isolation Pilot Plant (WIPP) for Radionuclide Solubility (1983-1991); Change-of-Station assignment from Los Alamos to support U.S. DOE-Headquarters, Hanford Tanks Waste Remediation System Technical Support Office, Washington, D.C. Advisor to U.S. Senator John Glenn's "Committee on Government Affairs" Office (1992-1993); Group Leader, Actinide Chemistry Group, Earth Sciences Division, Lawrence Berkeley National Laboratory, CA, P.I. for DOE Yucca Mountain and WIPP radionuclide solubility projects; instrumental in establishment of the Seaborg Institutes at Lawrence Livermore and Los Alamos National Laboratories (1993-1995); Senior Scientist consultant, RESPEC, Inc. serving DOE-Carlsbad and Sandia National Laboratories, NM, on the WIPP project, coauthor of the "Compliance Certification Application" to certify the WIPP as the world's first licensed nuclear waste repository, served on the Expert Panel for Radionuclide Solubility in Brines (1995-1999); Returned to Los Alamos, served as Team Leader, Actinide Analytical Chemistry Group, currently Acting Program Director for the Plutonium Manufacturing Maintenance Program, Chair of the Steering Committee, Guest Scientist, LANL Seaborg Institute, lanthanide and actinide hydrothermal synthesis and characterization (1999-present). Activities: Member Nuclear Chemistry and Technology Division of the American Chemical Society and Sigma Xi Scientific Research Society of North America. Professional activities: Consultant, Sandia National Laboratories, "Expert Panel for Radionuclide Solubility at WIPP Site"; Adjunct Professor of Chemistry, University of New Mexico, Los Alamos, and California State University, Hayward; Chair, "ACTINIDES-93 International Conference", Santa Fe, NM, 1993; Co-chair, Plutonium Futures – The Science Conference, Monterey, CA, 2006, Organizing Committee, Plutonium Futures, 2003; Analytical Chemistry in Nuclear Technology Symposia, National ACS Meetings, 2002-2006; Chair, Central New Mexico Section of the American Chemical Society; Co-author, Chapter 10, "Berkelium," in the "Chemistry of the Actinide and Transactinide Elements, 2nd and 3rd Editions" 1996 and 2006. Author of over 50 peer-reviewed, open-literature technical publications, 100 technical reports and research proposals, and presented more than 150 oral and poster presentations. Awards and Honors: American Men and Women in Science; Who's Who in the West; Who's Who in Science and Technology; International Leaders in Achievement; Personalities of the Americas, Invited Keynote Speaker 1990 "Welch Conference"; Rollins College "Alumni Achievement Award," 1991;" Los Alamos National Laboratory "Distinguished Performance Award," 2003, Los Alamos Laboratory Awards Program, 2006. Research interests: actinides in near-neutral aqueous solutions; speciation, stability, redox behavior, thermodynamics, and kinetics; Spectroscopy and electrochemistry of actinides in complexing aqueous media; plutonium(IV) colloid studies under environmental conditions; complexation of plutonium by natural siderophores; resonance neutron scattering of plutonium-240 for structural determination of protein calmodulin. NMR studies of actinide aqueous carbonate complexes; lanthanide and actinide hydroxychlorides hydrothermal synthesis and structural characterization.

SUMMER SCHOOL
From Richard Ferrieri

The division sponsored 2006 Nuclear and Radiochemistry Summer Schools have started at San Jose State University and Brookhaven National Laboratory (BNL). This year, the program at Brookhaven National Laboratory under the site directorship of Richard Ferrieri, and in affiliation with SUNY Stony Brook, continues to offer a teamed approach in education where primary lecturers including Paul Mantica (Michigan State University), Sheldon Landsberger (University of Texas), Abby Bickley (University of Colorado), Roy Lacey (SUNY Stony Brook), Greg Choppin (Florida State University), Ken Czerwinski (University Nevada, Las Vegas), Len Mausner (BNL) and Richard Ferrieri (BNL) will cover a broad spectrum of lecture topics with associated laboratory work covering nuclear theory, nuclear structure, nuclear reactions and radioisotope production, environmental radiochemistry, nuclear instrumentation, radiological safety, as well as targeting applications in environmental research, medicine, and industry, all within an intense six-week program.

FROM THE CHAIR-ELECT- Heino Nitsche

Chicago, IL, March 25 - 29, 2007

ACS Presidential Thematic Programming of DNCT: Chemistry for a Sustainable Energy Future

Nuclear Fuels – Science, Development and Technology.
Organizer: pending, potentially cosponsored by the American Nuclear Society (ANS).

Modern Nuclear Reactors - Improvements of Existing Technology and Generation IV Developments.

Spent Nuclear Fuel Reprocessing - Future, Present, and Past National and International Experiences.
Organizers: Dr. Monica C. Regalbuto, Argonne National Laboratory (ANL), regalbuto@cmt.anl.gov, Dr. Bruce Moyer, Oak Ridge National Laboratory, moyerba@ornl.gov , Dr. Michael Bronikowski, Savannah River National Laboratory, michael.bronikowski@srnl.doe.gov
Co-sponsored by I&EC Division, Separation Science and Technology subdivision (pending).

Nuclear Transmutation - A Solution for Long-Lived Waste?
Organizers: Dr. Kimberly W. Thomas, Los Alamos National Laboratory (LANL), kwthomas@lanl.gov, and Dr. Sara Scott, LANL, sscott@lanl.gov

Nuclear Waste Forms – Current Solutions and Future Challenges.
Organizers: Prof. Sue B. Clark, Washington State University, Pullmann, s_clark@mail.wsu.edu, Prof. Rodney C. Ewing , University of Michigan, Ann Arbor, rodewing@umich.edu, and Dr. William J. Weber (pending), Pacific Northwest National Laboratory {PNNL), bill.weber@pnl.gov

Understanding Radionuclide Transport in the Environment – Remediation, Nuclear Waste Disposal, and Long-term Stewardship.
Organizer: Dr. Daniel Kaplan, Savannah River National Laboratory (SRNL), daniel.kaplan@srnl.doe.gov, and NN.
Cosponsored by Geochemistry Division

Divisional Programming:

Fast Automated Radiochemistry Separations In Fundamental and Applied Nuclear Chemistry.
Organizers: Dr. Dawn Shaughnessy, Lawrence Livermore National Laboratory (LLNL), shaughnessy2@llnl.gov, and Prof. Ralf Sudowe, University of Nevada, Las Vegas, Ralf.Sudowe@unlv.edu

Calixarenes: State of The Art and Perspectives.
Organizers: Dr. Lætitia Delmau, Oak Ridge National Laboratory, delmaulh@ornl.gov, and Dr. Dean Peterman, Idaho National Laboratory, dean.peterman@inl.gov,
Sponsored by I&EC Division, Separation Science and Technology subdivision; cosponsored by DNCT.

Boston, MA, August 19 – 23, 2007

Nuclear Structure and Reactions in the Era of Radioactive Beams

Dr. Larry Phair (LBNL), LWPhair@lbl.gov, and Prof. Romualdo T. de Souza (Indiana U.) desouza@indiana.edu

Don't forget to send Roy Lacey your suggestions for our 2008 meetings in New Orleans, and Philadelphia.

SERMACS 2006

Programming of interest to Division members is being organized for the 2006 ACS Southeast Regional Meeting (SERMACS 2006). SERMACS 2006 will be held in Augusta, Georgia on November 1-4, 2006 (Wed. - Sat.). Three of the planned symposia deal with nuclear technology and should be of interest to divisional members. The symposia include "Recent Developments in Nuclear Fuel Cycle Processing", chaired by Tracy Rudisill (tracy.rudisill@srnl.doe.gov), "Nuclear Medicine", chaired by David DiPrete (david.diprete@srnl.doe.gov) and "Radiochemical Separations in Nuclear Technology", cochaired by Lætitia Delmau (delmaulh@ornl.gov) and Mark Barnes (mark.barnes@srnl.doe.gov).

Dr. Pascal Baron head of the Separation Process Chemistry Service in the Nuclear Energy Division of the Commissariat a l'Energie Atomique (CEA) in Marcoule, France will be the plenary speaker for the symposium, "Recent Developments in Nuclear Fuel Cycle Processing". Professor Michael Welch, Associate Director, Mallinckrodt Institute of Radiology, Washington University School of Medicine and Professor of Chemistry, Washington University in St. Louis will be the plenary speaker in the "Nuclear Medicine" symposium.

Funding from an Innovative Projects grant from the ACS Committee of Divisional Activities is supporting the meeting by providing travel funds to the plenary speakers and registration fees for undergraduate and graduate students. Please encourage your students to attend and present an oral or poster paper at the meeting. For more information concerning reimbursement of registration fees for students, please contact David Hobbs (david.hobbs@srnl.doe.gov).

For general information see the SERMACS 2006 web site: http://www.sermacs2006.org/

Announcing Publication of the Third Edition of *The Chemistry of the Actinide and Transactinide Elements* by Dave Hobart

A team of international experts was invited to co-author the third edition of a classic text, *The Chemistry of the Actinide and Transactinide Elements*. Edited by Lester Morss, Norman Edelstein, and Jean Fuger, the book will be released in July 2006 by Springer Publishers. The five-volume set is expected to be the most authoritative and comprehensive compilation of the chemical properties of the actinide and transactinide elements to date and is anticipated to be the definitive work for many years to come. The first edition of *The Chemistry of the Actinide Elements*, edited by Joseph Katz and Glenn Seaborg, was published in 1957 before the discovery of nobelium and lawrencium and the transactinide elements. The second edition of *The Chemistry of the Actinide Elements*, edited by Katz, Seaborg, and Morss, was published in 1986 by Chapman and Hall, London and New York. The third edition, containing thirty-one chapters, will include a contemporary and definitive compilation of the chemical properties of the elements from actinium (atomic number 89) to hassium (atomic number 108). Also included are authoritative review chapters on specialized topics; thermodynamics, electronic theory, spectroscopy, magnetic properties, organoactinide chemistry, coordination chemistry, solution chemistry, separation science, environmental science, trace analysis, transactinides and future element predictions, etc. The book editors assembled teams of authors who are active practitioners and recognized experts in their specialty to write each chapter. The editors and authors have endeavored to provide a thorough, balanced, and perceptive treatment of these fascinating elements at the frontier of the Periodic Table.

THE CHEMISTRY OF THE ACTINIDE AND TRANSACTINIDE ELEMENTS
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For the complete table of contents and author listing, see the web site at: http://www.springeronline.com