



Division of Nuclear Chemistry and Technology
American Chemical Society

NUCL Webpage – <http://www.nucl-acs.org>

Chair, 2018
Program Chair, 2018
LYNN FRANCESCONI
Hunter College
New York, NY 10065
Phone: (212) 772-5353
lfrances@hunter.cuny.edu

Chair-Elect, 2018
Program Chair, 2019
JEN SHAFER
Colorado School of Mines
Golden, CO 80401
Phone: (303) 273-3996
jshafer@mines.edu

Vice Chair, 2018
Program Chair, 2020
TORI FORBES
University of Iowa
Iowa City, Iowa 52242
Phone: (319) 384-1320
tori-forbes@uiowa.edu

Secretary, 2017-2019
SAMANTHA SCHRELL
Los Alamos National Lab
Los Alamos, NM 87544
sschrell@lanl.gov

Treasurer, 2017-2019
BRIAN POWELL
Clemson University
Anderson, SC 29625
Phone: (864) 656-1004
bpowell@clemson.edu

Councilors
SILVIA JURISSON, 2017-2019
jurissons@missouri.edu

GRAHAM F. PEASLEE, 2018-2020
gpeaslee@nd.edu

Alternate Councilor
PAUL BENNY, 2018-2020

Members-at-Large, Executive Committee
SUE CLARK, 2016-2018
JUSTIN WALENSKY, 2018-2020

NEWSLETTER October 2018

Newsletter Editor: Andrew Klose
Email: andrew.klose@augie.edu

Topics

- > FROM THE CHAIR
- > UPCOMING PROGRAMMING
- > NUCL ELECTION INFORMATION
- > COUCILORS REPORT
- > AWARD NOMINATIONS

FROM THE CHAIR

Lynn Francesconi

Greetings to NUCL division members. We are well into October now and, as usual, there is a lot going on in the NUCL Division.

The Fall, 2018 National meeting was held in Boston, MA and featured six well attended and exciting NUCL symposia in addition to General Topics. Many thanks to John Auxier II for organizing the technical sessions for this meeting. The sessions represented a symposium in honor of Leonard Mausner where Leonard's substantial contribution to the field in radiochemistry were highlighted. Nuclear Forensics was represented with speakers from National Labs, U.S. Department of Defense and academia. New Radioisotope Chemistry for Nuclear Medicine discussed production methods and medical approaches for employment of new elements in nuclear medicine. A symposium on Environmental Radiochemistry was jointly listed with GEO and highlighted the breadth of environmental radiochemistry across a wide range of disciplines. A symposium on Radiochemical Education highlighted new approaches for radiochemical education. Computational Theory was the subject of another symposium that encouraged discussion of advanced computation approaches and identified experiments to bench-mark theory to experimental approach.

If you are interested in organizing a symposium for a Spring National Meeting, please contact Amy Hixon. If you are interested in organizing a symposium for a Fall National meeting, please contact John Auxier II.

I want to thank Alan Packard and Brian Powell for organizing the social time after the Tuesday NUCL Division Business Meeting at the Roza Lyons Restaurant, a short walk from the NUCL sessions. This was a wonderful time for NUCL members and non-members to meet, talk and catch up in a wonderful atmosphere with excellent food. This was a time to meet and encourage students and postdocs just starting out in the field. We will continue to hold the social time off site as it is not only economical but we witness a different aspect of the host city. The Divisional Business Meeting and Social Time is a good venue to recruit new members. Recruiting ACS members into the NUCL division will promote the health and viability of the NUCL division.

The Spring 2019 ACS National Meeting & Exposition will be held in Orlando, FL March 31 - April 4. The theme for the meeting is "Chemistry for New Frontiers". **The abstract submission is open now and will close on October 29, 2018.** So please get the abstracts in!

Please read the Councilor's Report in this newsletter. The NUCL division is large enough to have two councilors. These are elected by the division and are Silvia Jurisson and Graham Peaslee. The councilors represent the division to the ACS; they also report back to the division on ACS concerns, issues and new programming and ideas to streamline the national meetings. The Councilor's Report has important information on the new ACS Meeting App, experimental e-posters that will be launched at the Orlando Spring 2019 meeting, innovative programming grants, national meeting

registration fees, and other important information.

Please read the Councilor's Report in this newsletter. The NUCL division is large enough to have two councilors. These are elected by the division and are Silvia Jurisson and Graham Peaslee. The councilors represent the division to the ACS; they also report back to the division on ACS concerns, issues and new programming and ideas to streamline the national meetings. The Councilor's Report has important information on the new ACS Meeting App, experimental e-posters that will be launched at the Orlando Spring 2019 meeting, innovative programming grants, national meeting registration fees, and other important information.

Congratulations to Thomas E. Albrecht-Schmitt on winning the 2019 Glenn T. Seaborg Award. This is a well-deserved honor and please read the article in this Newsletter describing Thomas's accomplishments and contributions to the field. Thomas will be honored in an Award Symposium at the 2019 Spring National ACS Meeting in Orlando.

I would like to draw attention to the need for financial support of the Glenn T. Seaborg Award in Nuclear Chemistry. We must develop a plan for continued funding for this important and prestigious ACS award. Please contact any of the NUCL officers if you have ideas for identifying future support.

The Awards Nomination Committee of the NUCL Division is headed by Paul Mantica. Please read the information from Paul in this Newsletter. The nomination deadline for the 2020 Glenn T. Seaborg Award for Nuclear Chemistry is fast approaching and is November 1, 2018.

Finally, please do not hesitate to contact me with concerns, comments, and information that will be useful to the NUCL Division.

NATIONAL MEETING PROGRAMMING

SPRING 2019 – Orlando, FL

March 31 – April 4, 2019

Theme: Chemistry for New Frontiers

The 257th ACS National Meeting & Exposition will be held March 31 - April 4, 2019 in Orlando, Florida. Abstract submission for the Spring 2019 National Meeting will open on August 20, 2018 and close on October 29, 2018. Symposia are listed below. Please contact Amy Hixon (ahixon@nd.edu) for more information.

- **Crosscutting Research in Environmental Radiochemistry and Nuclear Forensics**
Organizers: Luther McDonald (luther.mcdonald@utah.edu) and Amy Hixon (ahixon@nd.edu)
- **Young Investigators in Nuclear and Radiochemistry**
Organizers: Alison Tamasi (tamasi.alison@epa.gov) and Melissa Deri (Melissa.deri@lehman.cuny.edu)
- **Seaborg Award Symposium in honor of Thomas Albrecht-Schmitt**
Organizer: Kenneth Raymond (knraymond@gmail.com)
- **General Topics in Nuclear Chemistry and Technology**
Organizers: Jenifer Shafer (jshafer@mines.edu)
- **Nuclear Chemistry and Technology for Materials Production**
Organizers: Laetitia Delmau (delmaulh@ornl.gov)
- **Computational Methods in Lanthanide and Actinide Chemistry**
Organizers: Deborah Penchoff (dpenchof@utk.edu) and Charles Peterson (charles.peterson@unt.edu)

FALL 2019 – San Diego, CA

August 25 - 29, 2019

Theme: Chemistry of Water

The 258th ACS National Meeting & Exposition will be held August 25-29, 2019 in San Diego, CA. We are in the early planning stages for the Fall 2019 National Meeting. Tentative symposia are listed below. Please contact John Auxier, II (jauxier@utk.edu) for more information or if you would like to volunteer to organize a symposium.

- **Celebration of the centennial of Rutherford's first nuclear reaction**
Organizers: Todd Bredeweg (todddb@lanl.gov) and Donivan Porterfield (dporterfield@lanl.gov)
- **Water Behavior in Concentrated Electrolytes**
Organizers: Sue Clark (sue.clark@pnnl.gov) and Aurora Clark (auclark@wsu.edu)
- **Nuclear Forensics**
Organizers: John Auxier II (jauxier@utk.edu), Nicole Vanagas (nv137@georgetown.edu), and LTC Geoffery Bull (Geoffrey.Bull@usma.edu)
- **General Topics in Nuclear Chemistry and Technology**
Organizers: Jenifer Shafer (jshafer@mines.edu) and Gian Surbella (robert.surbella@pnnl.gov)
- **Molten Salt Reactor Chemistry**
Organizers: Kristian Myhre (myhreckg@ornl.gov) and Joanna McFarlane (mcfarlanej@ornl.gov)
- **Computational Methods for Lanthanides and Actinides**
Organizers: Deborah Penchoff (dpenchof@utk.edu) and Charles Peterson (Charles.peterson@unt.edu)
**Note this will include an oral session and a poster session.*

SPRING 2020 – Philadelphia, PA
March 22 – 26, 2020 (Amy Hixon)
*Theme: Macromolecular Chemistry: The
Second Century*

If you would like to organize a symposium for the Spring 2020 National Meeting, please contact Amy E. Hixon (ahixon@nd.edu).

- **Macromolecular Actinide Chemistry**
Organizers: Peter C. Burns (pburns@nd.edu) and Ginger E. Sigmon (gsigmon@nd.edu)
- **Radiotherapeutics**
Organizer(s) needed
- **Young Investigators in Nuclear and Radiochemistry**
Organizer(s) needed
- **Seaborg Award Symposium (TBA)**
- **General Topics in Nuclear Chemistry and Technology**

NUCL EXECUTIVE BOARD CANDIDATES

Election of officers for the NUCL Division of the ACS will occur later this year. Below are the candidates for open positions on the Executive Committee.

NUCL Vice Chair 2019 (Chair Elect 2020, Chair and Program Chair 2021, Immediate Past Chair 2022)

Thomas Albrecht-Schmitt – *Florida State U.*
Dean Peterman – *Idaho National Lab*

Member at Large (2019 – 2021)

Sue Clark – *PNNL (incumbent)*
Lætitia Delmau – *ORNL*

Candidate Biographies and Statements

Thomas E. Albrecht-Schmitt, *Florida State University* (albrecht-schmitt@chem.fsu.edu), received his B.S. in chemistry from Southwest Minnesota State University in 1993, and his M.S. and Ph.D. degrees in Inorganic Chemistry from Northwestern University (1994 and 1997) with James A. Ibers. He served as a postdoctoral fellow at the University of Illinois with John R. Shapley from 1997 to 1998. He spent 10 years at Auburn University where he rose through the ranks to full professor. He is currently the Gregory R. Choppin Chair in Chemistry at Florida State University and Director of the Center for Actinide Science & Technology, a Department of Energy, Energy Frontier Research Center that focuses on mitigating the environmental legacy of the Cold War. He is a Fellow of the Royal Society of Chemistry and winner of several American Chemical Society awards including the 2019 Glenn T. Seaborg Award for Nuclear Chemistry. He is a member of the Chemical Sciences Council for Basic Energy Sciences, U.S. Department of Energy. His research interests center on the chemistry, physics, and materials science of radioactive elements, especially heavy elements like plutonium and californium. He is active in programming at National ACS meetings and more specialized meetings where he has organized multiple symposia related to f-block chemistry. He has served as Chair-Elect, Chair, and Secretary of the Auburn Local Section of the ACS, and is the current faculty mentor for the ACS student-affiliates section at Florida State University.

Candidate Statement – Albrecht-Schmitt

My goals as Chair of the NUCL Division center around the need for broader dissemination and appreciation of nuclear research throughout the American Chemical Society, scientifically-literate audiences, and especially by non-scientists. Great strides have been taken in some areas of nuclear science to reintegrate into more general

programs, such as the merger between parts of inorganic and materials chemistry with radiochemistry. Similarly, the importance of the roles of radiochemistry, isotope production, separations, and reactor technology in nuclear medicine are also becoming increasingly appreciated. The momentum that we have built in these areas needs to be enhanced, and other areas of nuclear science such as radiation chemistry, nuclear security, and energy production need to be placed in the spotlight as well. As chair, I will work with other scientific societies such as the Royal Society and AAAS to showcase what nuclear scientists do in the broadest sense and work toward improving the recognition of the importance nuclear science in society. I will also team up with outreach groups from the ACS and the organizations that employ and sponsor our research to feature all of our discoveries and advances on a variety of platforms such as social media, early career networks, and directly to members of Congress.

Dean R. Peterman, *Idaho National Lab* (dean.peterman@inl.gov), received a B.S. in Chemistry from Denison University in 1988 and a M.S. and Ph.D. in Physical Chemistry from the University of Cincinnati in 1993 and 1995, respectively. While a post-doctoral research associate in the laboratories of Dr. Gregory R. Choppin at Florida State University, he studied the complexation of tetravalent actinides by aminopolycarboxylate ligands. He joined the Idaho National Laboratory (INL) as a member of the Aqueous Separations & Radiochemistry Department in 1999. He has over 25 years of experience in field of physical inorganic chemistry with an emphasis on the aqueous chemistry of lanthanide and actinide elements. His main research areas are the study of the effects of gamma radiolysis on solvent extraction processes and the use of soft donor ligand systems for the selective separation for trivalent actinides from lanthanides. He is a co-inventor of the Fission

Product Extraction (FPEX) solvent extraction process which simultaneously removes cesium and strontium from dissolved used nuclear fuel. He is a member of the team which received a 2011 R&D 100 Award for the development of the Rad-Release chemical decontamination technology and a 2014 Secretary of Energy's Honor Award recipient as a member of the Salt Waste Disposal Technologies Team. In addition to his research activities, he manages R&D laboratory facilities at the INL. In this role he is responsible for the development and approval for laboratory hazard mitigation documentation as well as oversight of laboratory R&D activities. Dr. Peterman has served in numerous leadership positions within the American Chemical Society (ACS) including Chair of the Idaho Section of the ACS, Chair of the SS&T sub-division of the I&EC division of the ACS, and Treasurer of I&EC division of the ACS.

Candidate Statement – Peterman

An important service of various Divisions of the ACS and the Nuclear Chemistry & Technology division in particular is to provide relevant, timely programming at the regional and national meetings of the ACS. Over the past few year, the NUCL division has done an excellent job sponsoring such programming. As the Chair of the NUCL division, I will work within the division and with other ACS divisions to continue offering new and exciting opportunities for academic, industrial, and government laboratory chemists to share their latest results and network with their peers.

Sue B. Clark, PhD, *Pacific Northwest National Laboratory & Washington State University* (sue.clark@pnnl.gov), holds the positions of Chief Scientist and Technology Officer and Battelle Fellow in the Energy & Environment Directorate (EED) at PNNL. She is also Regents Distinguished Professor of Chemistry with tenure at Washington State University (WSU) in Pullman, Washington. In this joint appointment, she stewards EED

science and technology programs, and is also the Director of the Energy Frontier Research Center focused on Interfacial Dynamics in Radioactive Environments and Materials (IDREAM) at PNNL. Prof. Clark is a Fellow of both the American Association for the Advancement of Science (AAAS) and the American Chemical Society (ACS), and is the 2012 recipient of the ACS's Olin-Garvan Medal. She has served on the National Research Council's Nuclear and Radiation Studies Board, and numerous National Academies committees on topics ranging from radioactive waste management to isotopes for medical applications to nuclear security. Prior to joining PNNL in her current joint appointment, Prof. Clark held a Presidential appointment to the US Nuclear Waste Technical Review Board, appointed by President Barack Obama (2011-2014). She holds a BS degree in Chemistry from Lander College (Greenwood, SC) and MS and PhD degrees in Chemistry from Florida State University (Tallahassee, FL).

Lætitia H. Delmau, PhD, *Oak Ridge National Lab (delmaulh@ornl.gov)*, is currently a research staff in the Radiochemical Science and Engineering Group (RSEG) at the Radiochemical Engineering Development Center (REDC). She originally joined ORNL as a postdoctoral researcher in the Chemical Separations Group (CSG) in the Chemical Sciences Division in October of 1997 and was hired in 2000. In 2014, she moved from CSG to RSEG in the Nuclear Security and Isotope Technology Division. She received her Ph.D. in physical chemistry from the University Louis Pasteur of Strasbourg, France in 1997. Lætitia currently conducts research on a wide range of project within the Pu-238 Production Program, the Cf-252 Program, and used to be an active researcher in the Critical Material Institute (CMI) and the Fuel Cycle Research and Development (STAAR) programs, focusing on separations, solvent extraction or

ion exchange primarily. During her many years in CSG, she worked primarily on the Caustic-Side Solvent Extraction system to remove Cs-137 from the high level waste stored at the Savannah River Site. She has authored 58 scientific papers published in refereed journals and holds 6 patents. She is also active in several professional organizations and has organized many symposia through the ACS. She was the Chair of the Division of Nuclear Chemistry and Technology in 2017 and is currently serving as Past-Chair.

COUNCILOR'S REPORT

Silvia Jurisson and Graham Peaslee

The ACS is governance structure is largely comprised of elected councilors that represent either Technical Divisions (20%) or Local Sections (80%). The Nuclear Division is large enough now to have two ACS councilors who represent our interests at the Council Meeting held at every national meeting as well as on several sub-committees that discuss matters that impact the Division. Together with Nuclear Division members that represent local sections the Councilors funnel information from the ACS governance to the Nuclear Division members and they also can convey concerns from the membership to the ACS leadership.

This Fall at the ACS National Meeting in Boston, we learned that there were 14,235 registered attendees, with almost 3700 students. The total membership of the ACS is a little under 150,000 currently and many of the leadership efforts center about recruiting new members, retaining existing members, and improving the value proposition of the ACS for current members.

The new ACS Meeting App was launched with the New Orleans meeting. The intent is that members will not need to upload a new app for each meeting, but will be able to open the current meeting within this app. If you had

any difficulties that you would like to have relayed to the ACS Staff, let us know.

From the Meetings & Expositions (M&E) committee meeting (Silvia Jurisson is a member; chair of Technical Programming sub-committee of M&E) we learned that some Session Chairs (moderators) were not attending their sessions (occurred especially on Thursday) and the speakers had to fend for themselves or someone took over on the spot. We also learned that there will be ePosters at the Orlando Spring meeting—this is an experiment to reduce the meetings footprint and also give the presenters a different format. In Boston, an alternative room design was evaluated for reducing the footprint of the meeting. One of the large ballrooms was split into 5 smaller curtained rooms and attendees used headsets to hear the speaker and not hear those in the neighboring rooms. We'll hear how it went at our next meeting.

From the Divisional Activities Committee (DAC) meeting (Graham Peaslee is a member), we learned that innovative programming grants are available to conduct ACS-facilitated strategic planning sessions for Divisions, as well as for new programming for Division Activities. Proposing symposia at national and regional meetings is a hard sell under the “novel” category anymore, but if you can think of any new activity or service that would benefit the NUCL Division, these grants (\$7,500 per request, \$12,500 per year) are available. Please send ideas to your councilors. The DAC is also working on revising the allocation formula to emphasize participation in local meetings and international meetings (both directions the ACS wishes to pursue to reduce the size of the two national meetings each year). The first pass was not well understood in New Orleans, and a better formula and explanation of it will be available for discussion in Orlando.

Since 2019 is the Year of the Periodic Table (the sesquicentennial of Mendeleev's original

observation), at the Committee on Nomenclature, Terminology and Symbols (CNTS) meeting (Graham Peaslee is a member), we learned that they are willing to partner with any Division willing to co-host a symposium at San Diego (Fall, 2019). Since the four most recent elements (113, 115, 117 and 118) were fully added into the Periodic Table, with IUPAC approval of their names and symbols, on 28 November 2016, it might be appropriate that anybody wishing to help coordinate a heavy element symposium in San Diego contact our Program Chair (Jen Shafer) or either of the councilors to help coordinate with the CNTS. Co-sponsored technical sessions that meet thematic programming like this tend to be scheduled in the main meeting space for greater visibility.

At the main Council meeting, electronic balloting elected Ella L. Davis, Lissa A. Dulany, Lisa Houston and Martin D. Rudd for 3-year terms, and Will E. Lynch for a 1-year term (2019) on the Council Policy Committee (CPC). They also elected Allison Aldridge, Christopher J. Bannochie, Mary K. Engelman, Silvia Ronco and Frankie K. Wood-Black for 3-year terms on the Committee of Nominations and Elections (N&E). Finally, Rodney M. Bennett, Jacqueline A. Erickson, Judith M. Iriate-Gross, Donovan R. Porterfield and Carolyn Ribes were elected for 3-year terms to serve on the Committee on Committees (ConC). Congratulations to our own Donovan Porterfield!

Council approved two Petitions on the International Chemical Sciences Chapters that (1) changes the wording and approval process and (2) allows them to collect Chapter dues to be used locally. The International Chapters are full ACS members like everyone else and we are seeing more international membership.

Council voted to continue the Committee on Chemical Safety, which was slated to end.

President Dorhout introduced and led a special discussion on what role(s) ACS should play in preventing sexual harassment in the sciences. A very lively and informative discussion followed. An electronic survey of the Councilors was held and the results are listed below:

(1) Have you ever witnessed or experienced sexual harassment at an ACS meeting or ACS event?

Yes 23% (94) No 77% (319)

(2) Have you ever witnessed or experienced sexual harassment at an ACS meeting or ACS event, or in your professional workplace or learning environment? (182 women/223 men)

	<u>Women</u>	<u>Men</u>
Yes	77% (141)	57% (127)
No	23% (41)	43% (96)

(3) How familiar are you with the ACS Codes and initiatives for professional conduct?

Very familiar	38%	(12)
Vaguely familiar	46%	(192)
Not familiar	16%	(68)

(4) Has your local section or division instituted a sexual harassment policy of its own?

Yes	3%	(12)
No	73%	(309)
Don't know	23%	(98)

More information on this to come from the ACS.

In light of the recent financial performance of the technical-meeting component of our national meetings, the Board voted to approve an advance member registration fee of only \$490 for the national meetings in 2019 (i.e. the current advance member registration fee escalated to account for inflation only). They also voted to allocate on a pro-rated basis to qualified ACS divisions any net revenues

accrued to the Society from the 2020 and future international PacifiChem conferences.

If you have any additional suggestions for the ACS in this regard, or concerns about anything ACS-related, please don't hesitate to contact your councilors who will do their best to let your voice be heard.

AWARDS NOMINATIONS COMMITTEE OF NUCL

Paul Mantica

The Awards Nominations Committee of the Division was formed to encourage and facilitate nominations for national ACS awards. Next month will be the deadline for the ACS National Awards. The Awards Nominations Committee members will be approaching members of the division to encourage nominations for the 2020 Glenn T. Seaborg Award for Nuclear Chemistry.

This national award is supported by NUCL, and additional information about the nomination process is available at:

<https://bit.ly/2QRQPAB>

The nomination deadline is November 1, 2018. Suggestions and questions regarding the award nomination process can be directed to Paul Mantica (mantica@msu.edu; 517-908-7456)

2019 GLENN T. SEABORG AWARD



The 2019 Glenn T. Seaborg Award winner is Thomas E. Albrecht-Schmitt, the CAST-EFRC Director at Florida State University. Albrecht-Schmitt is honored for his innovative systematic studies of the fundamental chemistry of the actinide elements using advanced experimental techniques, giving new insights into the chemical bonding of *5f* electrons, and training the next generation of heavy element scientists. An Award Symposium will be held at the 2019 Spring National ACS Meeting.

NUCL Newsletter, October '18, Page 8