



Division of Nuclear Chemistry and Technology
American Chemical Society

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

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NEWSLETTER

July 2020

Newsletter Editor: Andrew Klose

Email: andrew.klose@augie.edu

Topics

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FROM THE CHAIR

Tori Forbes

I hope the newsletter finds you safe and in good health. I know this spring and summer have been personally and professionally challenging, so I hope that everyone is taking steps to protect their physical and mental health. I also want to take a moment to offer support for the Black Lives Matter movement as they fight for racial justice in our society and to those of you engaged in anti-racism efforts throughout science.

The NUCL division leadership and programming team have been hard at work trying to iron out the details related to the Fall 2020 ACS meeting. I just want to say a big thanks to the programming team (John Auxier, Amy Hixon, Gian Surbella, and Tara Mastren) for the work they have done to reschedule the technical sessions from the Spring 2020 meeting. In addition, I want to thank the Spring 2020 technical session organizers for being responsive and flexible as we worked through the details and changes in programming.

Abstracts submission for the Fall 2020 meeting took place in the spring with the hopes of having the conference in San Francisco in August. In June, the ACS leadership team decided that a virtual format was the best option to protect the health of the members. All technical symposia will take place with recorded talks, but there are two options that are being developed to encourage scientific dialogue. Broadcast sessions will play the recorded slides/audio during a specific time slot and then allow for live question and answers after the session. On demand talks and posters will include the recorded talk or poster (with short audio) that will be available for a larger time period and paired with an online message system to provide an opportunity for questions. The programming team is currently in the process of determining which technical sessions and speaker will be assigned to the different virtual modes. Additional information will be provided to presenters regarding delivery mode, time slots, and mode for recording and uploading content.

Other quick notes about the Fall ACS meeting:

- ACS is requiring registration for the virtual meeting and additional details will be announced on the meeting website.

- We will be holding a virtual NUCL business meeting during the Fall ACS meeting timeframe and I want to encourage all members to attend. Details on the time and platform will be provided later.

- The 2020 Seaborg symposium and award ceremony honoring Professor Sue Clark has been moved to the Spring 2021 ACS meeting. The NUCL executive committee will be discussing the details of the 2020 and 2021 Seaborg awards at the next meeting.

- The NUCL Strategic Planning Retreat was also rescheduled again for the Spring 2021 ACS meeting.

Even with the future uncertainties with the programming team is currently planning technical sessions for 2021 meetings. If there is interest in organizing a technical session for the NUCL division, please contact the programming team.

To those of you planning for online, hybrid, or in-person classes this fall, I hope that you have a chance to enjoy these last few weeks before the semester or quarter begins. If you are looking for on-line content related to nuclear chemistry and radiochemistry, there are some resources on our website (<https://www.nucl-ac.org/>) under the education tab. This includes links to the ACS radiochemistry audio course, historic films, and the NAMP webinar series. If members have other radiochemistry and nuclear chemistry related resources they would like to contribute, please feel free to pass that content on me and we would be happy to post it for the community. I wish you all well during this challenging time and I look forward to being able to see everyone in person at future events whenever it is safe to do so.

NATIONAL MEETING PROGRAMMING

**FALL 2020 – San Francisco, CA
August 16-20, 2020**

Theme: Chemistry from Bench to Market

The 260th ACS National Meeting & Exposition will be held Virtually August 16-20, 2020 If you have questions, please contact John D. Auxier, II (jauxier@lanl.gov).

- **Computational Methods in Actinide Chemistry**

Organizers: Deborah Penchoff (dpenchof@utk.edu), Charles C. Peterson (Charles.Peterson@unt.edu), and Theresa L. Windus (twindus@iastate.edu)

This symposium has been well attended in the past where it seeks to find the

interface between benchtop chemistry and computational chemistry to promote predictive chemical methods that can be used to jointly improve our computational methods and also provide theoretical insights into the reactions that are observed in the lab.

- **General Topics in Nuclear and Radiochemistry**

Organizer: Tori Forbes (tori-forbes@uiowa.edu)

This is an excellent symposium for all things nuclear chemistry and an excellent place for student presentations. This is one of the longest running symposia in the nuclear division and often provides the most variety.

- **Solid State Material and Nuclear Fuels**

Organizers: Sarah Finkeldei (sfinkeld@uci.edu) and Ashley Shields (shieldsae@ornl.gov)

This symposium is focused on the advancements in materials science to support nuclear fuels both on the laboratory scale but also on the large scale efforts that are current in industry. This symposium has a strong focus on the ACS National Theme: Moving Chemistry from Bench to Market.

- **Heavy Element Chemistry Relevant to Nuclear Waste Disposal**

Organizers: Thomas Albrecht-Schmitt (talbrechtschmitt@fsu.edu), David Hobart (dhobart@fsu.edu), Brian Powell (bpowell@clemson.edu), and Hans Conrad Zur Loye

(zurloye@mailbox.sc.edu)

In addition to being within the theme of the meeting Moving Chemistry from Bench to Market, this symposium is organized to look into how the research from the heavy element community can be used to support an on-going scientific and technical area of nuclear waste.

- **Nuclear Forensics**

Organizers: John Auxier (jauxier@lanl.gov), Jennifer Erchinger (jerchinger@lanl.gov), and Jeffery Rolfes (Jeffery.rolfes@noblis.org)

This symposium will focus on the broad applications of nuclear forensics but with a new focus on detection with gamma-ray and neutron capabilities and the overlap of detection by traditional and advanced counting, with detection and laboratory radioanalytical methods. Note on this symposium is that all of the organizers are graduates of the 2009 San Jose Nuclear Summer School.

- **Radioisotope Production**

Organizers: Kristian Myhre (myhreckg@ornl.gov) and Luke Sadergaski (sadergaskilr@ornl.gov)

This symposium is also in the meeting theme Moving Chemistry from Bench to Market since it not only highlights the new radioisotopes that are on the horizon for therapy, but new and improved methods for production of well-known isotopes that are regularly used in industry today. This will represent large multi-disciplinary groups from chemistry, bio-chemistry, and chemical engineering. Not to be missed.

- **Macromolecular Chemistry** **Actinide**

Organizers: Peter C. Burns (pburns@nd.edu) and Ginger E. Sigmon (gsigmon@nd.edu)

SPRING 2021 – San Antonio, TX

March 21-25, 2021

Theme: Bonding Through Chemistry

The 261st ACS National Meeting & Exposition will be held March 21-25, 2021 in San Antonio, Texas. Symposia are listed below. Please contact Tara Mastren to create or organize a session. (email: Tara.Mastren@utah.edu)

- **Seaborg Award Symposium in honor of Sue B. Clark**

Organizers: Janet Bryant (janetsbliss@hotmail.com), Amares Chatt (A.Chatt@dal.ca), Aurora Clark (auclark@wsu.edu), Nathalie Wall (nathalie.wall@ufl.edu)

- **Radiotherapeutics: From Isotope Production to Targeted Delivery**

Organizers: Rebecca Abergel (abergel@berkeley.edu), Ethan Balkin (Ethan.Balkin@science.doe.gov), and Stosh Kozimor (stosh@lanl.gov)

- **Young Investigators in Nuclear and Radiochemistry**

Organizers: Deborah Penchoff (dpenchof@utk.edu) and TBD

- **Computational Methods for Lanthanides and Actinides**

Organizers: Deborah Penchoff (dpenchof@utk.edu) and TBD

- **General Topics in Nuclear Chemistry and Technology**

Organizers needed

ACS COMMITTEE ON SCIENCE

Jenifer Shafer

Small Division Representative

The ACS Committee on Science convened virtually for the Spring 2020 ACS meeting. During this congress, I learned I will be serving on the Public Policy subcommittee. The Subcommittee on Public Policy examines the scientific basis of public policies related to chemistry and makes recommendations to appropriate ACS entities, particularly the Public Affairs and Public Relations Committee of the ACS Board of Directors. Through this Subcommittee, the Committee on Science plays an important role in the development, review, and revision of the following policy statements:

- Competitive U.S. Business Climate: Innovation, Chemistry and Jobs
- Energy
- Forensic Science
- Hydraulic Fracturing
- Scientific Integrity in Public Policy
- Sustainability and the Chemical Enterprise
- Visa Restrictions

The policy statements are written in such a way to inform national policy and legislature. These policies are (I believe) reviewed annually. I have taken point on the Energy policy statement review. Since this policy statement is publicly available, I am able to receive input from the community regarding the current statement and recommendations for edits you might have. If you have edits you would like captured in the statement, please let me know at jshafer@mines.edu. I believe these will be discussed at the Fall ACS meeting and edits will be submitted to the Board of Trustees for review and sign-off.

NUCL DIVISION MEMBER HIGHLIGHT

Alison Tamasi, Editor



Andrew Klose

*Assistant Professor of Chemistry
Augustana University, Sioux Falls, SD*

Dr. Andrew Klose has parlayed his interest in the nexus of physics and chemistry and his ability to form lasting and fruitful collaborations into a bright and successful career. He's now a professor at Augustana University, but before he had even had his first class in physical chemistry, he was introduced to the world of nuclear chemistry through the Nuclear Chemistry Summer School. The course sparked and instant interest to the subject, and Andrew forged a career-long collaboration with the then-program director, Dr. Paul Mantica. From that point forward, Dr. Klose's career unfolded with a seeming simplicity, thanks to fortuitous opportunities and his ability to forge relationships. He went to graduate school with Dr. Mantica at Michigan State University, where he also came to work closely with Kei Minamisono at the National Superconducting Cyclotron Laboratory. To this day, he brings his expertise in laser spectroscopy to the table as part of a major collaborative effort with researchers at the

NSCL. When he isn't in the lab, Andrew and his wife spend time playing boardgames and instilling in their daughters (aged 7, 5, and 2), the same lifelong love of the outdoors that they have.

AWARDS NOMINATIONS COMMITTEE OF NUCL

Thomas Albrecht-Schmitt

The Awards Nominations Committee of the Division was formed to encourage and facilitate nominations for national ACS awards. Please nominate a colleague for one of the awards given below or another ACS award (<https://www.acs.org/content/acs/en/funding-and-awards/awards/national.html>).

Glenn T. Seaborg Award for Nuclear Chemistry

(<https://www.acs.org/content/acs/en/funding-and-awards/awards/national/bytopic/glenn-t-seaborg-award-for-nuclear-chemistry.html>) --

Nominations are initiated by individuals and the procedures are given on the ACS website. The next deadline is November 1, 2020. Suggestions and questions should be addressed to Thomas Albrecht-Schmitt (talbrechtschmitt@fsu.edu).

Charles D. Coryell Award

Please note that the award deadline for the 2020 Coryell Award for undergraduate research is September 1st. Any undergraduate who has been actively doing research in the nuclear chemistry field in the previous year is eligible for consideration of this award. To nominate a student for this award (which includes a certificate and a \$1000 check), please submit a sample of the student's work (in the form of a written report or a publication), together with a nomination letter from the research mentor that describes the extent and the nature of the student's involvement in the research. All the application materials should be emailed to Tori Forbes (tori-forbes@uiowa.edu) before September 1, 2020.

NUCLEAR CHEMISTRY SUMMER SCHOOLS 2020

Lynn Francesconi

The Nuclear Chemistry Summer School was online this year (June 15, 2020 – July 24, 2020) due to COVID-19 and progressed very well. The 12 students slated for the Brookhaven site and the 12 students slated for the San Jose State University site were together in the online course. Of course, the online course does not match the hands-on experience of the on-site, in person NCSS. However, the students worked and studied together as they would in person, but this time via Zoom, and they were engaged in the lectures, laboratories and guest lecturers. The goal of the Nuclear Chemistry Summer Schools is to interest exceptional undergraduates in nuclear chemistry and radiochemistry and recruit them into the field. The NCSS has been running since 1984 and has produced leaders in these fields.

Many persons worked very hard to get this online and provide a great experience for the students. Louis Pena, who is the site director for the Brookhaven site, organized the lectures, the guest seminars and virtual tours. Trish Baisden led the laboratory component effort with help from a creative team consisting of Jeff Bryan, Vanessa Sanders and Henry Bechtel. The TAs Brennen Murphy and Noella D' Souza did double duty grading

laboratories for 24, not the usual 12 and holding office hours for the students. The site director and deputy site director for the San Jose State University site are Annalise Van Wyngarden and Melody Esfandiari, respectively, and they arranged for many details of the online summer school, including helping the participants with any online glitches. Melody presided over the popular weekly Friday Happy Hour with the students! The primary lecturers for each week were Cody Folden, Christopher Klug, Alice Mignerey, Romualdo de Souza, Ken Czerwinski, and Henry Van Brocklin. Contributing and presenting some online lab experiments are Silvia Jurisson and Ken Czerwinski. Health Physics and Radiation Safety was presented by Vic Maraschin, from San Jose State University. Nick Esker, of SJSU is coordinating the student presentations.

I would like to thank the selection committee consisting of Glenn Fugate, Tara Mastren, John Brockman, Richard Wilson and Vanessa Sanders. These individuals examined 150 complete applications for the final selection of the 2020 class.

We are extremely grateful to the Department of Energy, Office of Science, Heavy Element Chemistry and Isotope Program for funding and for their unwavering support of the NCSS.