Division of Nuclear Chemistry and Technology
American Chemical Society

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

NEWSLETTER
August 2021

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Topics

FROM THE CHAIR

Thomas Albrecht-Schönzart

Welcome back to the new academic year and hopefully some return to normality. The Fall National ACS meeting in Atlanta is just a few weeks away (August 22-26) and will be held in a hybrid format. There are excellent symposia in the NUCL division, and your participation is both welcomed and needed.

The new strategic plan developed by the NUCL division and ACS that was presented in the last newsletter has been formally adopted by the division after being open to public comment. Achieving the goals presented therein requires all of us working together. We are developing strategies for increasing the participation of national labs with the NUCL division.

Additional good news is that the NUCL division has remained strong throughout the pandemic. The plan right now is for the Spring ACS meeting in San Diego (March 20-24, 2022; Abstracts due October 11) to be held in person. We look forward to seeing all of you there. In the meantime, please consider organizing symposia that are cross-cutting between divisions for future meetings.

NATIONAL MEETING PROGRAMMING

FALL 2021 – Atlanta, GA / Hybrid
AUGUST 22 – 26
Theme: Resilience of Chemistry

The 262nd ACS National Meeting & Exposition will be held August 22-26 in Atlanta, GA. The Format is hybrid, having both in-person and virtual components. Please contact Gian Surbella (robert.surbella@pnnl.gov). Oral Sessions are listed below; the abstract deadline has passed.

- **Seaborg Award Symposium in Honor of Sherry Yennello**

Understanding nuclear reactions is important for discovery science, delivering for society and developing future workforce. This symposium will celebrate the achievements of Sherry Yennello that span all three of these dimensions of nuclear reactions research. The presentations will demonstrate the importance of inclusive excellence in pursuit of fundamental and applied studies.
Organizers:
Lauren McIntosh
lheilborn@tamu.edu and
Joe Natowitz
natowitz@comp.tamu.edu

- **Nuclear Forensics**

This session will focus on nuclear and radiochemistry as they pertain to nuclear forensics science. Suggested Topics include: Case Studies or Evaluations of Samples of Opportunities, Analytical Methods for the Analysis of Special Nuclear Materials and Radioactive Materials, Morphological and Microstructural Features for Group Inclusion/Exclusion, Novel Evaluation Techniques, and Radiochronometry.
Organizers:
Jon Schwantes
Jon.Schwantes@pnnl.gov and
Brittany Robertson
brittany.robertson@pnnl.gov

- **Young Investigators in Nuclear & Radiochemistry**

This symposium is a platform for young investigators, spanning undergraduate through 5 years after receiving their Ph.D., to present their research. Topic areas include nuclear and radiochemistry, with a focus on: Medical and standard isotopes production, Actinides and fission products chemistry, Actinides materials and nuclear waste forms, Actinides and fission products spectroscopies, Geological/environmental actinide chemistry, and Synthetic Actinide Chemistry.
Organizers:
Gabe Hall
gabriel.hall@pnnl.gov and
Thibaut Lécrivain
Thibaut.Lecrivain@inl.gov

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

This symposium will focus on topics of interest in nuclear and radiochemistry that range from fundamental exploratory science to applied nuclear science and emerging technologies.
Organizers:
John Auxier
jdauxier@lanl.gov and
Rebecca Mueller
Rebecca.Mueller@colostate.edu

- **Computational Science for Lanthanides and Actinides**

This session focuses on applications of computational science to lanthanides and actinides to advance solutions in nuclear and radiochemistry needs. Topics include integrated experimental and theoretical research, computational chemistry modeling, software development, high performance computing (HPC) advances, and theoretical chemistry and physics. The multidisciplinary nature of this session contributes to strengthening resilience in chemistry. It creates collaborations and fosters a collegial environment to support

ACS members at all career levels.
Organizers: Deborah Penchoff
dpenchof@utk.edu
Theresa Windus
twindus@iastate.edu and
Charles Peterson
charles.c.peterson3@gmail.com

- **Data Science and Artificial Intelligence Applications in Nuclear and Radiochemistry**

This session focuses on applications of artificial intelligence (AI) to nuclear and radiochemistry needs. It highlights advances in current data science techniques and trends in model predictions. Topics include broad AI interests including machine learning, neural networks, algorithm design, and data science and analytics to evaluate properties of interest including material design, morphology analysis, molecular systems, detection and spectroscopy, and new accuracy standards determination. As growth in high performance computing capabilities continues to increase, AI applications enable a new level of insight which contributes to chemistry's resilience in providing solutions for national and global interests.
Organizers:
Deborah Penchoff
dpenchof@utk.edu
Theresa Windus
twindus@iastate.edu and
Charles Peterson
charles.c.peterson3@gmail.com

SPRING 2022 – San Diego, CA
March 20 - 24
Theme: Bonding Through Chemistry

The 263rd ACS National Meeting & Exposition will be held March 20-24, 2022 in San Diego, CA. We are looking for volunteers to organize symposia for this meeting. Please contact Tara Mastren (Tara.Mastren@utah.edu) with potential symposia topics or for more information. The abstract deadline is October 11th.

- **Young Investigators in Nuclear and Radiochemistry**

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

- **Title: Data Science and Artificial Intelligence Applications in Nuclear and Radiochemistry**
  Organizers: Deborah Penchoff
  dpenchof@utk.edu
  Theresa Windus
  twindus@iastate.edu, and
  Charles Peterson
  charles.c.peterson3@gmail.com

- **Title: Computational Science for Lanthanides and Actinides**
  Organizers: Deborah Penchoff
  dpenchof@utk.edu
  Theresa Windus
  twindus@iastate.edu, and
  Charles Peterson
  charles.c.peterson3@gmail.com

ACS WESTERN REGIONAL MEETING
Art Gelis (artem.gelis@unlv.edu)

I am pleased to announce that the ACS Western Regional Meeting will be held here, in fabulous Las Vegas in October 19-22, 2022 (Wed-Sat). The special topic symposium titled "Radiochemical Separations for Nuclear Forensics and Nuclear Medicine" will consist of two sessions and will accommodate up to 20 speakers.

Please note that Nevada National Security Site (formerly the Nevada Test Site) is only 90 miles away and should be open for tours by the conference date.
https://www.nnss.gov/pages/PublicAffairsOutreach/NNSStours.html

Also note that late October is one of the best times to visit Las Vegas with sunny and warm weather in the upper-70s to low-80s F (25-30 ^{0}C). More information can be found at https://www.wrm2022.com/

NUCLEAR CHEMISTRY SUMMER SCHOOLS 2021

Lynn Francesconi

The Nuclear Chemistry Summer School (NCSS) successfully completed its 37th year (June 14, 2021 – July 23, 2021). The NCSS 2021 was totally virtual this year due to COVID-19. As we did last year, the 12 students slated for the Brookhaven (BNL) site and the 12 students slated for the San Jose State University (SJSU) site were grouped together in the online course. Within this format, we were still able to provide an intensive lecture course, a conceptual and data analysis driven laboratory course, and an extensive series of guest seminars.

While the virtual format is certainly not ideal for the NCSS in place of an intensive hands-on, on-site experience, the silver lining may be that the SJSU and BNL staff worked well together and produced an excellent virtual program that maintained the expected intellectual rigor and still provoked interest in nuclear science among the students. This experience will aid the two sites in being more aligned in the future and possibly using technology to bring added value to both on-site programs. We were also able to accommodate more guest seminars from a wider variety of institutions due to the virtual format.

The outstanding students for the NCSS 2021 are Alexandra Hays, a rising senior at Pacific University, Forest Grove, Oregon, and Johnathan Phillips, a rising senior at Clemson University, Clemson, South Carolina. Both demonstrated excellence in the lecture and lab courses as well as their final presentations. They will attend the Spring 2022 American Chemical Society Meeting to receive their awards during the NUCL division business meeting.

We are grateful to the NCSS staff for organizing the lectures, laboratories, guest lectures, virtual tours, and student presentations. The organizers are, for the BNL site, Melissa Deri, Vanessa Sanders, and Cathy Cutler. For the SJSU site, the organizers are Jeff Bryan, Trish Baisden, Hank Bechtel, Annalise Van Wyngarden, Melody Esfandiari, Victor Maraschin, and Nick Esker. The weekly lecturers who presented fundamentals of nuclear and radiochemistry for the first five weeks included Cody Folden, Christopher Klug, Alice Mignerey, Silvia Jurisson, and Romualdo de Souza. In the last week, Trish Baisden, Alice Mignerey, Henry VanBrocklin, and Ken Czerwinski gave seminars describing applications of nuclear chemistry and radiochemistry. Trish Baisden and Annalise Van Wyngarden, SJSU, presided over the informative session on how to apply to graduate schools. The Teaching Assistants who provided support in the laboratory course and office hours were Robert Rider, Isabel Wroblewski, Michael Davern, and Brody Lennon all returning from the 2020 virtual NCSS cohort. Overall, the NCSS 2021 was very well received by the students and influenced many students to consider Nuclear Chemistry and Radiochemistry for their future career paths.

Please advertise the NCSS 2022 to your students. We plan to be on-site in summer, 2022. We will be soliciting applications starting in October or November 2021 for a February 1, 2022 deadline.

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

AWARDS NOMINATIONS COMMITTEE OF NUCL

Thomas Albrecht-Schönzart

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, 2021. 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 2021 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 Thomas Albrecht-Schmitt (talbrechtschmitt@fsu.edu).

FACULTY POSITION ANNOUNCEMENT

The Department of Chemistry at HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK (CUNY) anticipates the imminent search for a tenure track faculty position in Radiochemistry at the Assistant, Associate, or Professor rank to start in Fall, 2022. A Ph.D. (or equivalent) degree in Chemistry, or an appropriate discipline, is essential. Broad research areas within Radiochemistry will be considered. Candidates should have an outstanding record of scholarly publications commensurate with their career trajectory. The potential to obtain external funding is necessary for junior rank and a history of such funding is required for more senior candidates. Please contact Professor Lynn C. Francesconi, Lfrances@hunter.cuny.edu for more information.

Job Vacancy - Nuclear Instrumentation

Career position for Research Scientist 3 is immediately available at New York State Department of Health in Albany, NY.

Function Description

The Laboratory of Inorganic and Nuclear Chemistry at the New York State Department of Health's Wadsworth Center performs radiological surveillance of natural and man-made radioactivity in air, water, vegetation, soil, and food for New York and federal purposes, as well as responds to incidents involving ionizing radiation including power reactor accidents, hospitals, and radiological dispersal devices. The responsibilities involve overseeing the radiation measurements laboratory for this program.

Preferred Education and Experience

A PhD degree in nuclear engineering, nuclear physics, nuclear chemistry or health physics and one year of professional experience in ionizing radiation measurements.

Technical Expertise Sought

Thorough understanding of the radioactive decay process. Understanding health risks from ionizing radiation. Experience in at least two radiation measurement systems such as gamma-ray spectrometry, alpha spectrometry, liquid scintillation, gas proportional counting, radon counting. Setting up and calibration of a variety of ionizing detectors. Ability to trace electronics signals, troubleshoot, and interface instruments. Performing surveillance measurements. Basic understanding of local area networks. Familiarity with Visual Studio and/or SQL Server. Computer programming in at least two high-level languages, such as C, C++, Fortran, VBA.

General Capabilities Desired

Work independently under general guidance of senior staff. Effectively communicate with the scientific, technical, and administrative staff. May supervise junior personnel. Capabilities to conceive scientific ideas and to participate and/or conduct publishable research and development in ionizing radiation detection, such as improvement of sensitivity or lowering of the background, and in radiological health sciences either internal or externally funded.

Salary Range

From $81446 to $111316 annually.

For technical information contact:

Dr. Thomas Semkow
(thomas.semkow@health.ny.gov)

To apply contact:

https://statejobs.ny.gov/public/vacancyDetailsView.cfm?id=87618

New York State Department of Health is an Equal Opportunity Employer. Eligibility to accept employment in the U.S. is required.