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Members-at-Large, Executive Committee SUE CLARK, 2019-2021 JUSTIN WALENSKY, 2018-2020 Division of Nuclear Chemistry and Technology American Chemical Society

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

NEWSLETTER October 2020

Newsletter Editor: Andrew Klose Email: <u>andrew.klose@augie.edu</u>

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FROM THE CHAIR Tori Forbes

The end of 2020 is in sight and it has definitely been one for the history books. This will be the last newsletter that I will contribute to as the Chair of the NUCL division and I can say that my tenure in the position was different that I envisioned it to be! I want to give a big thank you to the NUCL executive committee for helping me navigate these unprecedented times with thoughtful guidance. I also want to say thank you to the programming team and for all the NUCL members as we worked through the chaos of terminating the spring ACS meeting and moving the fall meeting online. I really appreciate the patience and flexibility of the members as we tackled rescheduling and technical issues along the way.

Turning to some exciting news, I just want to provide my sincere congratulations to Professor Sherry Yennello (Texas A&M University), our 2021 Glenn T. Seaborg awardee. She is absolutely deserving of this prestigious honor due to her important contributions in nuclear chemistry and efforts to advance and encourage women in the field of nuclear science. A symposium in Professor Yennello's honor will occur during the Fall 2021 ACS meeting. Also, please note that Professor Sue Clark (2020 Seaborg awardee) symposia will occur during the Spring 2021 meeting due to disruptions over the past year.

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We were able to move forward with a 2020 Fall national ACS meeting in August, but it was held with virtual-only programming. I know there were some technical issues along the way, but I just want to say thank you to both the organizers and everyone who participated in the event. There is still a lot of uncertainty about the Spring 2021 meeting scheduled for March 21-25, 2021 in San Antonio, TX. Deadlines for abstract submission are currently unavailable, but I encourage you to check the website frequently for the latest information:

(https://www.acs.org/content/acs/en/members hip-and-networks/td/manuals/futuremeeting-deadlines.html)

If you have any interest in organizing a symposium for Fall 2021, please reach out to our programming team or incoming Chair, Professor Thomas Albrecht-Schönzart.

We had to delay the NUCL strategic planning session until Spring 2021, but we are viewing this as an opportunity to hear from you. The NUCL business meeting will be held virtually this year on **Sunday**, **October 25**, 2020 at 6 **p.m. CST** and we will use part of this meeting as a listening session to hear from our members. I want to encourage everyone to come and share their thoughts on future directions for the division. I will be sending several reminders and the Zoom link via email and we will also post this broadly on social media outlets.

I hope that everyone stays safe and healthy for the remainder of the 2020. I'll be passing the baton to Professor Thomas Albrecht-Schönzart and look forward to working with him as Past-chair in 2021.

COUNCILOR'S REPORT Silvia Jurisson, 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 all the ACS Divisions. 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 year was a very unusual year for the ACS with the Spring meeting in Philadelphia cancelled at the last possible moment and the August meeting in San Francisco turned completely virtual, all due to the COVID-19 pandemic. Both of us attended the virtual Fall meeting, and future ACS meetings may be virtual or a hybrid meeting (some in person, some virtual) or in person. It is likely they will be very different from what we have had in the past, in large part due to the COVID-19 pandemic. The Spring 2021 meeting is scheduled for San Antonio, however, the city has several restrictions that will limit the number of concurrent sessions and the number of attendees per room. This will at best make it a hybrid meeting (some in person and some virtual) depending on the status of the COVID-19 pandemic, and it may end up also being entirely virtual. For those of you who attended the Fall 2020 virtual ACS meeting, we would like to hear any comments and suggestions you have. The highest cost for the virtual meetings is the virtual platform and the personnel needed to address any issues that arise during the meeting. These platforms will continue to improve, but most are not meant for meetings as large as the National ACS meetings. Some of you may have heard about larger Divisions who held more real-time meetings concurrently with the ACS meeting using institutional Zoom This allowed for more oral accounts. presentations than were allowed by the limits of the software in San Francisco, but means those presentations were entirely outside of the ACS National Meeting structure. We would particularly like to hear from NUCL members who have attending previous National Meetings about the advantages and disadvantages they see in moving forward with more virtual or hybrid National meetings. All suggestions welcome at this stage, as the NUCL Division will try to navigate what is best for its membership.

The ACS Council meeting was held virtually during the ACS meeting, on Wednesday morning. We learned that there were 6,477 registered attendees, which included 1,638 students. There were 4,067 presentation uploads, including the pre-recorded oral and poster presentations. Some of the prerecorded oral presentations were on-demand only and some were held during pre-set sessions with live Q&A sessions at the end handled by a moderator and the speakers synchronously.

From the Meetings & Expositions (M&E) committee meeting (Silvia Jurisson is a member; chair of Technical Programming subcommittee of M&E) there have been many virtual zoom meetings before and after the Fall 2020 virtual meeting. Much of the discussion focused on how the virtual meeting would be run, what was possible with current virtual platforms, whether real "live" sessions could be held, and so forth. Afterwards we focused on what worked and didn't work as well. As with any new meeting platform, there were glitches during the meeting and the "live" sessions.

From the Divisional Activities Committee (DAC) meeting (Graham Peaslee is a member, and co-chair of the Divisional Enhancement and Outreach Sub-committee) committee time was spent trying to figure out the impact of canceled and hybrid National meetings on the allocation of funds for Technical Divisions and Local Sections. Since these allocations are based in part on the attendance and number of sessions and presentations at national

meetings, we voted to the continue distribution of funds based on the previous three years of data. Going forward, realizing that there is significant paradigm shift likely in large meeting attendance for years to come, we are talking about different ways to restructure the allocation formula for funding to encourage activities that work. Meetings tend to be places where students and young professionals get exposure, and where significant networking takes place. While virtual meetings can replace some of these functions, we generally felt that there were significant changes that could be made. Thus, the plea for idea from membership to describe what may work best for all segments of our Division. We also allocated funding for Innovative Program Grants, and will continue to solicit ideas (and fund them) for imaginative new approaches that a Division can try.

At the main Council meeting, electronic balloting elected Elizabeth M. Howson, Zaida C. Morales-Martinez, Margaret J. Schooler, and Jeanette M. Van Emon for three-year terms (2021-2023), and Mark D. Frishberg for a one-year term (2021) on the Council Policy Committee (CPC). Also by electronic ballot, the Council elected Martha G. Holloman, Diane Krone, Sarah M. Mullins, Andrea B. Twiss-Brooks, and Javier Vela for three-year terms (2021-2013) on the Committee on Committees (ConC). Lastly, Jetty L. Duffy-Matzner, Kevin J. Edgar, Neil D. Jespersen, Julianne M. D. Smist, and Linette M. Watkins were elected for three-year terms (2021-2023) to the Committee on Nominations and Elections (N&E).

Council approved the Petition to Clarify Amendments to the Standing Rules and disbanded the Joint Board-Council Committee on Chemical Abstracts, which were approved by the Board of Directors.

Council approved the creation of an ACS International Chemical Sciences Chapter in Israel, which was approved by the Board of Directors.

Ballots for the 2020 fall national election were distributed beginning 28 September with voting closing on 23 October (4-week window). If you have any additional suggestions for the ACS, 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.

NATIONAL MEETING PROGRAMMING

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. The abstract deadline is yet to be determined. (email: <u>Tara.Mastren@utah.edu</u>)

- Seaborg Award Symposium in honor of Sue B. Clark Organizers: Janet Bryant (janetsbliss@hotmail.com), Amares Chatt (<u>A.Chatt@dal.ca</u>), Aurora Clark (<u>auclark@wsu.edu</u>), 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 (<u>dpenchof@utk.edu</u>) and TBD
- Computational Methods for Lanthanides and Actinides Organizers: Deborah Penchoff (<u>dpenchof@utk.edu</u>) and TBD

• General Topics in Nuclear Chemistry and Technology Organizers needed

NUCL DIVISION MEMBER HIGHLIGHT Alison Tamasi, Editor



Dr. Suzanne Lapi Cyclotron Facility Director Director, Division of Advanced Medical Imaging Research Professor, Department of Radiology and Chemistry University of Alabama at Birmingham

Dr. Suzy Lapi has forged an exceptional and impactful path with her career in radiochemistry. She was originally lured to the field by the scale and uniqueness of the instrumentation, and encouraged by strong mentors she has become one of the most capable and creative minds in medical isotope research. Dr. Lapi sees radiochemistry as the bridge to an awe-inspiring tapestry of career niches, which is how she found her way from a lab investigating astrophysics (TRIUMF) to a job at a Radiology department and hospital cancer center interacting with physicians, researchers and patients (having cleverly

leveraged her various positions to foster crossdisciplinary connections). She has fearlessly paved her career path by effectively engaging the support and guidance of her extensive and diverse network. She is effervescently passionate about radiochemistry and sees her career as a "lifestyle choice", but Suzy also makes time to enjoy cooking and playing with her almost 3-year-old son, Eddie.

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 2021 (Chair Elect 2022, Chair and Program Chair 2023, Immediate Past Chair 2024)

Justin Walensky – University Missouri-Columbia Richard Wilson – Argonne National Lab

Councilor (2021 – 2023) Graham Peaslee – *University of Notre Dame*

Alternate Councilor (2021 – 2023) Paul Benny – Oak Ridge National Lab Julie Ezold – Oak Ridge National Lab

Member-at-Large (2021 – 2023)

Erin R. Bertelsen - University of Massachusetts Lowell Deborah Penchoff – Institute of Nuclear Security, University of Tennessee

Candidate Biographies and Statements

Justin R. Walensky, *University of Missouri-Columbia*, originally hails from Albany, New York, and moved to Sarasota, Florida while a sophomore in high school. He received a B.A. in Chemistry from New College of Florida in 2005 and a Ph.D. in Chemistry (2009) from the

University of California, Irvine with William Evans. The research for his undergraduate thesis was conducted at Lawrence Livermore National Laboratory (with Annie Kersting), and he was awarded a Glenn T. Seaborg Fellowship during his Ph.D. to work with Richard Martin at Los Alamos National Laboratory. Justin was a postdoctoral researcher with Michael Hall at Texas A&M University in 2010, before moving to the University of Missouri, Columbia in January 2011. His research group focuses on the synthesis, characterization, and reactivity of *f*element complexes, especially with soft donor ligands. Since June 2015, Justin has served as Associate Chair for Undergraduate Studies, and was promoted to Associate Professor with tenure in 2016. Since 2013 he has served as Local ACS councilor for the University of Missouri section, and as a member-at-large for the NUCL division.

Richard E. Wilson, Argonne National Laboratory, received a B.S. in Chemistry from the State University of New York at Binghamton in 2000 before starting graduate school at the University of California. Berkeley with Prof. Heino Nitsche. His doctoral work focused on the environmental chemistry of the actinides, particularly plutonium and its interactions with iron oxide minerals. While at Berkeley he collaborated with the nuclear chemistry group at the 88" cyclotron at LBNL, participating in atom-at-atime chemistry experiments investigating the chemistry of Rf, Hf, and Zr. After graduating in 2005, he took a postdoctoral fellowship in the Heavy Elements and Separation Sciences Group at Argonne National Laboratory with Dr. Lvnda Soderholm. In 2007 he was hired as an assistant chemist in the Heavy Elements and Separation Sciences Group at ANL where his research program focused on the synthetic and physical inorganic chemistry of the actinide elements. In 2012 he was awarded a Department of Energy Early Career Research Award to investigate the chemistry of protactinium, and continues to

pursue his research interests into the periodic properties and trends within the actinide elements. In 2019 he became the group leader of the Heavy Elements Chemistry Group at ANL. He has been active in organizing symposia at ACS and other international meetings, including the Seaborg Award Symposium for Heino Nitsche, symposia at the Asia-Pacific Symposium on Radiochemistry, and has been a member of the program committee for the Plutonium Futures meetings. Most recently he is serving as the program chair for the Rare Earth Research Conference 2020. He is a graduate of the 1999 ACS Summer School in Nuclear and Radiochemistry and continues to support the Summer School as a guest lecturer. He is the founding chairperson of ANL's mid-career working group and continues to be a strong advocate for the advancement of early career and mid-career scientists and engineers. As a Division's member of the Executive Committee he is committed to expanding the appeal of the division to early career researchers, students, and faculty to promote the expansion of nuclear science. Equally important is broadening programing and cooperative activities with the other technical divisions in order to demonstrate the breadth and impact of nuclear science and technology and its importance to the ACS.

Graham F. Peaslee, University of Notre Dame, obtained his undergraduate degree from Princeton University (AB, Chemistry, 1981) and his graduate degree from SUNY -Stony Brook (Ph.D., Chemical Physics, 1987). He took post-doctoral appointments at Lawrence Berkeley Laboratory (1988-1990) and the National Superconducting Cyclotron Laboratory (1990-1993). In 1993 he joined the Chemistry Department at Hope College in Holland, MI. He was promoted to Associate Professor in 2000, and promoted to full Professor in 2007. In 2011 he was named the Hartgerink Professor of Chemistry. In 2016, he was hired as a Professor of Experimental Nuclear Physics at the University of Notre

Dame, in order to lead their applied nuclear physics program. In 2000-2001 he was a visiting scientist at the Center of Accelerator Mass Spectrometry at Lawrence Livermore National Laboratory, and in 2007-2008 he was a visiting scientist at the Counterterrorism and Forensic Science Research Unit in the Laboratory Division of the FBI. He is a member of both the NUCL division of the ACS and the APS DNP and has served on the Coryell Award committee from 2003 to 2017. He has been a councilor for the NUCL division for the past eight years and he was selected as an ACS Fellow in 2019. His research interests include: Heavy ion reactions with radioactive nuclear beams, isotope harvesting of longlived radioisotopes, ion beam analysis and low-background gamma spectroscopy and environmental applications of elemental and isotopic measurements.

Paul D. Benny, Oak Ridge National Laboratory, received his B.S. from Missouri Baptist University in Chemistry & Mathematics (1996)and Ph.D. in radio/nuclear chemistry from the University of Missouri-Columbia (2001) with Prof. Silvia Jurisson. He spent two years as a postdoctoral researcher with Prof. Roger Alberto in the Inorganic Institute, University of Zurich (2002-2004). He joined the faculty of Washington State University in the chemistry department as an assistant professor (2004-2010) and promoted to associate professor (2010-2017).His research focused on inorganic applications of radioisotopes in nuclear medicine, nuclear fuel cycle and environment remediation. He was engaged in the development of the radiochemistry education program training graduate and undergraduate students at WSU. While at WSU, he served as acting Chair of the Radiation Safety committee overseeing the Radiation Safety office for WSU main and satellite campuses, member of the nuclear safeguards committee of the TRIGA Reactor (1MW) at the Dodgen facility. He also previously served as Chair of the American

Chemical Society Nuclear Division (2016) and Nuclear Science Advisory Committee (2016). He joined Oak Ridge National Laboratory as a Senior Researcher in the Nuclear Materials Processing group at the Radiochemical Engineering Development Center. He is the principle investigator of the Ac-225 production for alpha therapy.

G. Ezold, Oak Ridge National Julie Laboratory, is the Section Head for Radioisotope Production and Operations in the recently formed Radioisotope Science and Technology Division at Oak Ridge National Laboratory. In this role she is responsible for performing and optimizing the production of all radioisotopes that are in a continuing and sustained state of demand and production beyond the research and development phases. This includes major radioisotope production efforts \geq \$10M/year in scope as well all other ongoing campaigned radioisotope or production activities at ORNL. In addition, she is the Program Manager for the Cf-252 Production Program, responsible for the technical and project management of the radiochemical campaigns. Campaign products include, but are not limited to 252Cf, 249Bk, 253Es, and other trans-curium products. These trans-curium products have recently been used in the discovery of the new elements, Element 117, Tennessine and Element 115, Moscovium. She has been responsible for the planning and overseeing of other industrial isotopes including: 14C, 63Ni, 75Se, 90Sr and 237Np. She has supported isotope R&D program development and production efforts via development of cost estimates, process planning, and stake holder presentations. She received the 2019 E. Gail de Planque Medal from the American Nuclear Society which recognizes exemplary accomplishments by a woman in the fields of nuclear science and engineering. In 2018 she was presented with the UT-Battelle Awards Night Science Communicator Award for leadership in communicating the importance and impact of nuclear science to numerous groups through interactive presentations, program coordination, and community outreach. Prior to joining ORNL, she earned her Master's in Nuclear Engineering at North Carolina State University on a DOE Fellowship. Her research was conducted at ORNL at the High Flux Isotope Reactor using their neutron activation analysis facility for the study or radioiodine, specifically, Iodine-129.

University Erin R. Bertelsen. of Lowell, is currently Massachusetts an Assistant Professor in the Department of Physics & Applied Physics. Prior to joining UMass Lowell, she received a BS in Chemistry from Dickinson State University in 2016. Under the advisement of Professor Jenifer Shafer at the Colorado School of Mines, she focused on solid-liquid separation chemistry for *f*-elements using carbon-based supports. While in graduate school, she was a U.S. Department of Energy Office of Science Graduate Student Research awardee (2018), allowing her to expand her doctoral work under Dr. Mark Antonio using electrochemical and X-ray synchrotron techniques. Her work was acknowledged with a first-place award in Science Engineering Nuclear and for Innovations in Nuclear Technology R&D by the U.S. Department of Energy, Office of Nuclear Technology R&D (2019). She received her PhD in Applied Chemistry in 2020 before starting her faculty position at UMass Lowell, where she will help institute radiochemistry proficiency through research and course development. Her research interests revolve around *f*-element separations, including using novel electrode materials for redox-controlled separation processes, rationally designed materials for solid-liquid separations, and understanding binding interactions using the hard-soft acid base theory for selective trivalent actinide and lanthanide separations. She currently serves as the Diversity and Inclusion Officer of the NUCL Division.

Deborah A. Penchoff, Institute for Nuclear Security, University of Tennessee, received a B.S. with focus on Chemistry and Mathematics from Lee University in 2007, and a Ph.D. in Physical Chemistry with an Interdisciplinary Graduate Minor in Computational Sciences from the University of Tennessee (UTK) in 2014. Her doctoral work focused on optimization and design of extracting agents for separations of lanthanides and actinides - under the direction of Professors George K. Schweitzer and Robert J. Harrison. Since 2018, she has been the director of the Scientific Fellows Program at the UTK Institute for Nuclear Security where she leads an interdisciplinary team with the goal of finding solutions to challenges of relevance in national and global security with focus on nuclear and radiochemistry. She is the Chief Editor of a recent ACS book to be released in 2021 focused on computational science applications in nuclear and radiochemistry. In addition to chairing recurring symposia in ACS-NUCL, including the Computational Science for Lanthanide & Actinide Chemistry, the Young Investigators in Nuclear & Radiochemistry. and the recently incorporated Data Science & Artificial Intelligence Applications in Nuclear and Radiochemistry, she has recently been involved in the ACS-NUCL strategic planning committee. She has also chaired the Gordon Research Seminar in Computational co-organized Chemistry and the Radiobioassav and *Radiochemical* Measurements Conference. She is the recipient of two outstanding teaching awards from the ACS Student Affiliates and UTK, has been selected for the Early Career Program at the Conference International for High Performance Computing (SC20), and is an XSEDE Campus Champion. As a strong supporter of students, she leads a program for high school students from minority and lowincome schools, is a mentor in the UTK Promise Program, a co-chair in the Diversity, Equity, and Inclusion Action Committee in the UTK Nuclear Engineering Department, a

member of the Outreach and Engagement Subcommittee in the UTK COVID-19 Taskforce. mentor in the XSEDE а EMPOWER program, and mentors graduate students and post-graduate scholars in research, various areas of including radiochemistry, inorganic chemistry, and nuclear engineering. Her research has focused on development of computational protocols for evaluations of bonding, reactivity and detection of Rare Earth Elements (REEs). critical materials. and actinides in applications relevant to national security radiochemistry, (including selective separations REEs and actinides. of radionuclides for cancer treatment, nuclear forensics, and nuclear waste.) She has been included in multiple highlights at the Howard H. Baker Jr. Center for Public Policy, the National Energy Research Scientific Computing Center, and the Joint Institute for Computational Sciences. She has reviewed for the Department of Energy, the National Science Foundation supported Extreme Science and Engineering Discovery Environment, and multiple journals. She is a Global Security Fellow at the Howard H. Baker Jr. Center for Public Policy. Prior to her career in science, she was an analyst at IBM. As a strong supporter of the ACS-NUCL division, she is thankful for the welcoming nature of the division and is grateful for the career-changing collaborations the ACS-NUCL fostered, which resulted in direct advances in nuclear and radiochemistry. She looks forward to creating an environment that provides opportunities to students and early career scientists and engineers. As a member of the executive committee, she is committed to applying her vast leadership experience and multidisciplinary background to represent the ACS-NUCL division and its members' interests, enhance the division's recognition in the ACS, and foster relationships with other ACS divisions, and internal and external increase participation partners to and membership in the division.

NUCLEAR CHEMISTRY SUMMER SCHOOLS

Lynn Francesconi

The Nuclear Chemistry Summer School ran online this year (June 15, 2020 – July 24, 2020) due to COVID-19. 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.

Many persons worked very hard to get this online and provide a great experience for the students. Louis Pena 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 The TAs, Brennen Murphy and Bechtel. Noella D' Souza, did double duty grading laboratories for 24, not the usual 12 and holding office hours for the students. Annalise Van Wyngarden and Melody Esfandiari, of SJSU, 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 Codv Folden. Christopher Klug. Alice Romualdo Mignerey, de Souza. Ken Czerwinski, and Henry Van Brocklin. Silvia Jurisson and Ken Czerwinski contributed some on-line lab experiments. Health Physics and Radiation Safety was presented by Vic Maraschin, from San Jose State University.

Nick Esker, of SJSU, coordinated the student presentations.

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.

Please advertise the 2021 NCSS to your undergraduate students. We will be taking applications soon.

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/fundingand-awards/awards/national/bytopic/glenn-tseaborg-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-Schönzart (talbrechtschnoezart@gmail.com).

Postdoctoral Positions in Actinide Chemistry and Repository Science

The Hixon Research Group within the Department of Civil & Environmental Engineering & Earth Sciences at the University of Notre Dame seeks to hire a postdoctoral researcher in the broad areas of repository science. The position is physically located at the University of Notre Dame, but requires extensive collaboration with partner institutions. Therefore, the applicant should demonstrate success working as part of a team. In addition, postdocs are expected to publish their results in peer-reviewed publications and contribute to internal reports to the U.S. Department of Energy and other stakeholders. Prior experience working with actinides is desired, but not required.

The position is aligned with the Los Alamos Actinide Chemistry and Repository Science team that is affiliated with the Waste Isolation Pilot Plant (WIPP) TRU repository. This position will primarily support ongoing research to provide a strong scientific basis for the WIPP repository safety case in the areas of environmentally-relevant actinide brine chemistry and actinide redox behavior. There remain many fundamental questions on the high-pH speciation and redox behavior of multivalent actinides in the environment. Repository science is an inherently international field and work/experience within the international community is desirable but not required. Candidates are sought who have demonstrated expertise, as evidenced by peerreviewed publications, in areas including, but not necessarily limited to: mineral synthesis; sorption, complexation, and solubility processes; and geochemical or thermodynamic modeling (e.g., PHREEQC, FITEQL).

For further information or to apply to either position, please email Professor Amy E. Hixon (<u>ahixon@nd.edu</u>). Applications must include a letter detailing your qualifications and research experience, a curriculum vita, and the names and contact information for at least three persons willing to provide professional references. Review of applications will commence immediately and will continue until the position is filled.