Division of Nuclear Chemistry and Technology
American Chemical Society

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

NEWSLETTER
October 2017

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Topics

FROM THE CHAIR

Lætitia Delmau

This year has flown by and here is my last contribution as Chair of the Division. I want to thank all of you for having given me the chance to serve. I want to start by congratulating Suresh Srivastava from Brookhaven National Laboratory for being this year's Glenn T. Seaborg Award recipient.

This year's Fall National Meeting in Washington, DC appeared to be a real success for our Division. The NUCL technical sessions were very well-attended despite being schedules outside the convention center. Many thanks to the organizers, speakers, and attendees for your participation. The social hour was organized off-site for the first time (at least first time in a long time) and the feedback from those who attended it was excellent. This is something we will plan on doing again in New Orleans this Spring. Talking about New Orleans, abstracts are due on October 16. Please do not delay entering your abstract as it gets very difficult to do so after the deadline and becomes an imposition on our Program Chair.

In New Orleans, we will have symposia on Actinide Complexes and Nanoclusters, our regular Young Investigators in Nuclear and Radiochemistry, Computational Methods for Lanthanides and Actinides: Theory and Applications (Both Oral and Poster sessions), General Topics in Nuclear Chemistry and Technology (again Both Oral and Poster sessions), Isotope Harvesting at Accelerator Facilities, and finally the Seaborg Symposium in honor of Suresh C. Srivastava. I hope to see you there!

I also encourage you to contact John Auxier if you would like to organize a symposium in Boston in the Fall of 2018. John has agreed to replace Jeff Terry and is now our Program Chair for the Fall meetings. Likewise, I would recommend contacting Amy Hixon if you would like to organize a symposium in Orlando (Spring 2019). This may sound too far in the future but with abstract submission deadlines typically 6 months ahead of a meeting, it's never too early to think about it.

I also want to announce that Paul Mantica has agreed to replace Steve Yates as Chair of the NUCL Awards Nominations Committee. I want to thank Steve for his service and welcome Paul back in this new role. All the current members of this committee have agreed to continue serving in this role. Thanks to all of you!

As I mentioned before, the health of the Division is primarily assessed by the number of members. This translates directly in the amount of money the ACS gives back to the Division and the number of councilors we are allowed to have. In conjunction with the fact that the ACS is increasingly encouraging poster sessions, we are planning on having a table/poster at the upcoming Sci Mix poster session. Please consider volunteering 30 minutes of your time if you are one of the attendees, preferably young(er), to man the poster and talk to potential new members.

As always, feel free to contact me regarding any Division matters. We want you to be involved!

I'll close by wishing Lynn Francesconi the best for the year as Chair.

NATIONAL MEETING PROGRAMMING

SPRING 2018 – New Orleans, LA
March 18-22, 2018 *(Amy Hixon)*
Theme: The Food, Energy, Water Nexus

The 255th ACS National Meeting & Exposition will be held March 18 - 22, 2018 in New Orleans, Louisiana. Please contact Amy Hixon (ahixon@nd.edu) with questions. Abstracts for the following symposia will be due October 16, 2017.

- **Actinide Complexes and Nanoclusters**
  Organizers: Karah Knope
  (kek44@georgetown.edu)
  and Tori Forbes
  (tori-forbes@uiowa.edu)

- **Computational Methods for Lanthanides and Actinides: Theory and Applications**
  (Both Oral and Poster)
  Organizer: Deborah Penchoff
  (dpenchof@utk.edu)

- **General Topics in Nuclear Chemistry and Technology**
  (Both Oral and Poster)
  Organizer: Lynn Francesconi
  (lfrances@hunter.cuny.edu)

- **Young Investigators Symposium**
  Organizers: Ralf Sudowe
  (Ralf.Sudowe@colostate.edu)
  and Todd Bredeweg
  (toddb@lanl.gov)

- **Isotope Harvesting at Accelerator Facilities**
  Organizers: Todd Bredeweg,
  (toddb@lanl.gov)
  Gregory Severin,
  (severin@nscl.nsu.edu)
  and Graham Peaslee
  (gpeaslee@nd.edu)

- **Seaborg Award Symposium in Honor of Suresh C. Srivastava**
  Organizer: Cathy Cutler
  (ccutler@bnl.gov)

FALL 2018 – Boston, MA
August 19-23, 2018 *(John Auxier II)*
Theme: Nanotechnology

The 256th ACS National Meeting & Exposition will be held August 19-23, 2018 in Boston, MA. We are looking for symposium ideas and symposium chairs for this meeting. Please contact John Auxier II (jauxier@utk.edu) if you are interested.

- **Nuclear Forensics**
  Organizer: John Auxier II
  (jauxier@utk.edu)

- **Symposium in Honor of Dr. Leonard Mausner**
  Organizer: TBA

- **Radioanalytical Methods in Public Health**
  Organizer: John Brockman
  (brockmanjd@missouri.edu)

- **Environmental Radiochemistry**
  Organizer: Don Reed
  (dreed@lanl.gov),
  Marcus Altmaier,
  (mmarcus_altmaier@kit.edu)
  and Amy Hixon
  (ahixon@nd.edu)

- **Radiochemistry Education**
  Organizers: Donna McGregor
  (dmcgreg@hunter.cuny.edu)
  and Melissa Deri
  (melissa.deri@lehman.cuny.edu)

SPRING 2019 – Orlando, FL
March 31 – April 4, 2019 *(Amy Hixon)*
Theme: Chemistry for New Frontiers

The 257th ACS National Meeting & Exposition will be held March March 31 - April 4, 2019 in Orlando, Florida. We anticipate that the call for papers will be due in July 2018 and are looking for symposium ideas and chairs beyond those listed below. Please contact Amy Hixon (ahixon@nd.edu) if you are interested in volunteering.

- **Crosscutting Research in Environmental Radiochemistry and Nuclear Forensics**
  Organizers: Luther McDonald
  (luther.mcdonald@utah.edu)
  and Amy Hixon
  (ahixon@nd.edu)

- **Young Investigators Symposium**
  Organizers: Alison Tamasi
  (tamasi.alison@epa.gov)
  and TBA

- **General Topics in Nuclear Chemistry and Technology**
  Organizers: TBA

FALL 2019 – San Diego, CA
August 25 - 29, 2019 *(John Auxier II)*
Theme: Chemistry of Water

The 258th ACS National Meeting & Exposition will be held August 25-29, 2019 in San Diego, CA. We are looking for symposium ideas and symposium chairs for this meeting. Please contact John Auxier II (jauxier@utk.edu) if you are interested.. Tentatively planned symposia include:

- **Celebration of the centennial of Rutherford's first nuclear reaction** *Looking for Session Chairs*

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 2018 (Chair Elect 2019, Chair and Program Chair 2020, Immediate Past Chair 2021)
Sam Bryan – *Pacific Northwest National Lab*
Tori Forbes – *University of Iowa*

Councilor (2018 – 2020)
Graham Peaslee – *University of Notre Dame*
Zhen Cheng – *Stanford University*

Alternate Councilor (2018 – 2020)
Paul Benny – *Oak Ridge National Lab*

Member at Large (2018 – 2020)
Leigh Martin – *Oak Ridge National Lab*
Justin Walensky – *University of Missouri*

Candidate Biographies

Samuel A. Bryan, *Pacific Northwest National Laboratory* (sam.bryan@pnnl.gov), received his B.S. in chemistry from Boise State University in 1979, and his M.S. and Ph.D. degrees in Inorganic Chemistry from Washington State University (1883 and 1985) with D. Max Roundhill. He served as a post-doctoral fellow at Oak Ridge National Laboratory with W. Jack McDowell and Bruce A. Moyer from 1985 to 1987. He spent 3 years teaching chemistry as an Asst. Professor at Georgia Southern University (1987-1990) before starting his career at the Pacific Northwest National Laboratory (PNNL) where he is currently a Staff Scientist at within the Nuclear Chemistry and Engineering group. His work at PNNL centers in the areas of Inorganic, Analytical, and Separations Chemistry with a focus on applications in sensor development targeting metals and metal complexes within groundwater, nuclear fuel reprocessing solutions and tank waste. He also serves as an adjunct lecturer in chemistry at the Washington State University, Tri-Cities campus (1991 to present). He has over 90 publications and approximately the same number of government reports. Sam particularly enjoys mentoring students at all levels and has served on multiple graduate thesis committees through collaborations with academic partners. He is active in programming at Regional and National ACS meetings and PITTCON meetings where he has organized multiple symposia related to sensors in harsh environments. He has been on the organizing committees of two Northwest Regional ACS (NORM) meetings, once as the Program Chair (NORM'07). Sam twice served as Chair-Elect, Chair, and Past-Chair of the Richland Section ACS (1998 and 2004), and was elected as a Fellow of the American Chemical Society in 2013.

Tori Forbes, *University of Iowa* (tori-forbes@uiowa.edu), received a B.S. in Chemistry from Beloit College in 2001 before beginning her graduate career at the University of Notre Dame in 2003 with Professor Peter Burns. Much of her doctoral work on fundamental neptunium chemistry was completed in collaboration with Dr. Lynda Soderholm and the Heavy Elements Chemistry group at Argonne National Laboratory. She completed her Ph.D. in 2007 and then pursued postdoctoral positions in hybrid materials (Professor Slavi Sevov, University of Notre Dame) and thermodynamics (Professor Alexandra Navrotsky, University of California at Davis). She began her independent career in 2010 at the University of Iowa where her research focuses on fundamental actinyl chemistry in aqueous solution, synthesis of uranyl hybrid materials, and novel uranium detection methods using spectroscopic approaches. She has published over 50 peer reviewed articles on these topics and her work is supported by NSF, DOE, NIH, and NRC. She was promoted to the rank of associate professor in 2016 and was awarded the University of Iowa Dean's Scholar award for excellence in both teaching and scholarship. As an assistant professor, she and her collaborator, Michael K. Schultz, established the University of Iowa Radiochemistry program and developed radiochemistry coursework for both undergraduate and graduate students. She also led efforts to secure funds from the Nuclear Regulatory Commission graduate fellowship program, which has provided an opportunity for over 20 graduate students in the University of Iowa Department of Chemistry to gain skills in radiochemistry and safe handling of nuclear materials. Some of her interests in being a part of the NUCL division leadership team includes developing additional avenues and programming to encourage more students, postdoctoral scholars, and early career faculty to become involved in both the division and radiochemistry and nuclear chemistry research.

Graham F. Peaslee, *University of Notre Dame* (gpeaslee@nd.edu), obtained his undergraduate degree from Princeton University (B.A., 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 APS DNP and the NUCL division of the ACS and has served on the Coryell Award committee from 2003 to 2017. He has been a councilor for the NUCL division for the past five years. His research interests include: Heavy ion reactions with radioactive nuclear beams, ion beam analysis and low-background gamma spectroscopy and environmental applications thereof, and most recently radioisotope harvesting from FRIB.

Zhen Cheng, *Stanford University* (zcheng@stanford.edu), received a B.S. degree in Chemistry from Sichuan University in China in 1994 and a M.S. degree in Isotope Technology and Radiopharmaceutical Chemistry from China Institute of Atomic Energy in 1997. Then he studied peptide based radiopharmaceuticals and obtained his

Ph.D. in Radiopharmaceutical Chemistry from the University of Missouri-Columbia under the mentorship of Drs. Silvia Jurisson and Thomas Quinn in 2001. From 2001 to 2003, he completed his postdoctoral work under the supervision of Drs. Alun Jones and Ashfaq Mahmood at Harvard Medical School. Following that he joined Dr. Sanjiv Sam Gambhir's group at Stanford University as a Research Scientist to study multimodality imaging probes and techniques, and he became an Assistant Professor in 2007 and Associate Professor in 2014 in the Radiology Department at Stanford. Currently Dr. Cheng is the Director of the Cancer Molecular Imaging Chemistry Laboratory of the Molecular Imaging Program at Stanford. His research interest has focused on developing novel molecular imaging probes and techniques for non-invasive detection of cancer and other diseases. He has published over 200 research articles on the topic of radiopharmaceuticals and molecular imaging in peer reviewed journals. Dr. Cheng served as a Board Director of the Radiopharmaceutical Sciences Council (RPSC) in the Society of Nuclear Medicine and Molecular Imaging from 2012 to 2014. He has been an active member of several professional societies including the American Chemical Society (Division of Nuclear Chemistry & Technology, Division of Medicinal Chemistry) since 1999. Dr. Cheng has also served as an active reviewer for many funding agencies and over 100 research journals. He has been a committee member of the Non-human Use Radiation Safety Committee (NHRSC) at Stanford University since 2009.

Paul D. Benny, *Oak Ridge National Laboratory* (bennypd@ornl.gov), 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 post-doctoral 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 recently joined Oak Ridge National Laboratory as a Senior Researcher in the Nuclear Materials Processing group at the Radiochemical Engineering Development Center.

Leigh R. Martin, *Oak Ridge National Laboratory* (martinlr@ornl.gov), received his Ph.D in Chemistry from the University of Manchester (UK) in 2003 studying degradation effects on actinide separations chemistry. He then held research positions at British Nuclear Fuels and Washington State University working in the field of aqueous *f* element chemistry. For over 9 years Dr. Martin led research on minor actinide separations and radiation chemistry at Idaho National Laboratory. Since July 2016 he has been performing research related to nuclear non-proliferation as a Nuclear Chemical Engineer within the Process Engineering Research group at ORNL. Dr. Martin has been an active ACS member through the I&EC and DNCT/NUCL division and served in elected positions for the Separation Science & Technology subdivision

of I&EC Vice Chair-Elect (2010), Chair-Elect (2011), Chair (2012), and Past Chair (2013) and the I&EC division itself Chair-Elect (2014), Chair (2015), and Past Chair (2016).

Justin Walensky, *University of Missouri* (walenskyj@missouri.edu), was born in Albany, New York and he moved with his family to Florida in high school. He received his B.A. Chemistry in 2005 from New College of Florida. His undergraduate research was primarily done at Lawrence Livermore National Laboratory under the direction of Dr. Annie Kersting. He obtained his Ph.D. Chemistry from the University of California, Irvine with Dr. William Evans and was a Glenn T. Seaborg Fellow at Los Alamos National Laboratory before graduating in 2009. In 2010, he was a postdoctoral fellow with Dr. Michael Hall at Texas A&M University. He moved to the University of Missouri in 2011 and was promoted to Associate Professor in 2016. Since June 2015, he has served as Associate Chair for Undergraduate Studies for the department of chemistry at MU. Justin's primary research interests are the coordination chemistry, bonding, and reactivity of actinide complexes, particularly thorium, uranium, and neptunium. He has been awarded a Nuclear Forensics Junior Faculty Award from the Department of Homeland Security as well as an Early Career Award from the Department of Energy.

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 Washington DC, we learned that there were 12,904 registered attendees, with almost 3000 students. The Fall meeting is always smaller than the Spring meeting, especially considering many institutions begin their Fall semesters at about this time. The total membership of the ACS is a little over 156,000 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. To that end the Meetings and Expositions Committee (of which Silvia is a member) has suggested trying to shorten the National meetings to 4 days (no Thursday programming) and to reduce the number of satellite sessions held in hotels (where the costs are not negotiated by the ACS) instead of in the convention center itself. The plan is to pilot this at the 2021 Fall meeting in Atlanta since this venue was just added and contract discussions/negotiations are still underway. The ACS is trying to encourage more poster sessions to encourage sessions in the Exhibitor area in the late afternoon (i.e, 4-6 pm, for example). Similarly, in the Divisional Activities Committee (of which Graham is a member) work continued on the Innovation Project Grants (IPGs) – both to award new ones, and to understand why more Divisions don't request IPGs. These grants are for innovative projects designed to attract new members, keep existing ones or to improve the value proposition for existing members. They are grants of $7,500 per cycle, or $12,000 in a calendar year, and they are reviewed twice a year. In the last 4 years, Division officers from NUCL have applied 5 times and have been awarded 3 IPGs. Only

three Divisions (out of 33 in the ACS) have applied more often, and there are several divisions that seem to be unable to suggest innovative ideas for revitalizing their Division. While NUCL is doing well in this regard, if you can think of any activities that we could do as a Division that would be novel and could be attempted with a seed grant like the IPG, please let us know and we would be happy to prepare more IPG applications. A long-range planning retreat for Division officers is also an allowed IPG (even though it isn't necessarily innovative), but it has to be a moderated retreat for two or more days to count. The NUCL division has not held one of these yet, and could consider applying for one. To do this, we would need to identify a set of new officers that could work with existing Division officers to work on improving the NUCL division for all its members. Please let any officer know if you might be interested in becoming a divisional officer in the future.

At the main Council meeting, electronic balloting elected 3 Council Policy Committee (CPC) members for 3-year terms (Karl S. Booksh, Mark D. Frishberg, Zaida C. Morales Martinez) and Ella L. Davis for a 1-year term. Electronic balloting elected Michael Appell, Neil D. Jespersen, Mamie W. Moy, Eleanor D. Siebert, and Julianne M. D. Smist for 3-year terms to the Committee on Nominations and Elections (N&E). Additionally, Mitchell R. M. Bruce, Jetty Duffy-Matzner, Martha G. Hollomon, Diane Krone, and Robert A. Pribush were elected to the Committee on Committees (ConC) for 3-year terms by electronic balloting. A petition to allow financial support for International Sciences Chapters of the ACS and to remove By-Laws language prohibiting them from having representation on Council narrowly failed. Council defeated a proposal to establish a probationary Division of Space Chemistry. The prior proposal to establish a Material Science Division did not make it to Council for vote. Council approved a petition from the South Jersey Local Section to annex the adjacent and unassigned region of Ocean County, NJ. The Fall 2017 ACS national election period will begin on 29 September with a voting deadline of 27 October; most of us will receive electronic ballots (if email address on file). 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.

NUCL MEMBER HIGHLIGHT

Alison Tamasi, Editor

Dr. Lindsay Shuller-Nickles
Assistant Professor, Clemson University

Dr. Shuller-Nickles' career has often been propelled forward by her ability to take serendipity and turn it into opportunity. It is what drove her to create a thesis topic from two entirely separate projects she was working on (research for Yucca Mountain risk assessment, and performing uranium and thorium dioxide calculations) and in the process contribute greatly to the body of known literature on environmental Np. By drawing motivation from side projects and collaborators, Lindsay has progressed almost seamlessly into her current project exploring how dopants fit into host phases – where

either the dopant or the host phase is radioactive. She credits the mentors she's had in her career for shaping her outlook on research and collaboration by treating students as intellectual equals and by guiding her toward impactful, fundamental work. Now that she has students of her own, Lindsay pays that guidance forward by encouraging her students to pursue side projects, affording them a chance to spark the same inspiration and creativity that has helped propel her success. Though at work she's a theorist, at home Lindsay likes to get hands-on and make crafts, cook food, and even garden. She also loves to walk around downtown Greenville, SC, go hiking, and spend quality time with her beautiful family, including her two kids.

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 **2019 Glenn T. Seaborg Award for Nuclear Chemistry**. This national award is supported by NUCL, and additional information is available at:

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

The nomination deadline is November 1, 2017.

Suggestions and questions regarding the award nomination process can be directed to Paul Mantica (mantica@msu.edu; 517-908-7456)

Update on the Nuclear Chemistry Summer Schools

J. David Robertson
(RobertsonJo@missouri.edu)

The ACS Summer Schools in Nuclear and Radiochemistry were held for the 34th year at San Jose State University (SJSU) and the 29th year at Brookhaven National Laboratory (BNL). Annalise Van Wyngarden (a former participant in the Summer School) served as Site Director at SJSU and Trish Baisden (the originator of the Summer School) was the primary instructor at SJSU. Special thanks to Trish's husband, Bear Bechtel, who graciously assisted Trish with logistics and all of the IT for the SJSU program. Louis Pena served as Site Director at BNL and Jon Fitzsimmons oversaw the labs at BNL. Guest lecturers were invited to talk at each site about their areas of expertise, generally in a one hour invited lecture accompanied by an opportunity to interact socially with the students. Major themes at both locations included environmental radiochemistry, actinide chemistry, and radiobiology. The students had the opportunity to meet and go to dinner with the speakers and talk with them in a setting outside of the classroom. At SJSU, there were 13 guest lecturers: 8 representing research universities, 4 from US DOE National Laboratories, and one from industry. At BNL, there were 10 guest lecturers: 5 from National Laboratories and 5 from universities. The course syllabus and list of guest lecturers and field trips for SJSU can be found at:
http://www.murr.missouri.edu/nncss/course_info/schedule-17.php
and for BNL at
https://www.bnl.gov/ncss/schedule/.
The outstanding students from the 2017 program, Alex O'Brien (SJSU) and Michael Zott (BNL), will be invited to attend the upcoming national ACS meeting in New Orleans.

Postdoctoral Appointee (#402955)
Physics Division
Argonne National Laboratory
Lemont, IL (Southwest Suburb of Chicago)

The Physics Division of Argonne National Laboratory is seeking to hire a postdoctoral appointee in support of low-energy experimental nuclear physics research carried out at the ATLAS accelerator facility. The position involves providing targets and radioactive sources required for accelerator beam studies. A strong background in nuclear chemistry or radiochemistry is highly desirable. Along with senior staff, the individual will assist in the operation and maintenance of the target making laboratory. Some of the responsibilities will include:

- Handling and manipulating stable and radioisotope materials into forms needed for targets and sources.
- Developing new techniques for the production of targets and radioactive sources.
- Conducting and publishing original research to advance the art of target making.

In this role, you will:

- Investigates the feasibility of applying scientific principles and concepts to potential inventions and products.
- Plans and executes laboratory research.
- Models and interprets experimental results.
- Maintains substantial knowledge of state-of-the-art principles and theories, may contribute to scientific literature and conferences.

This job description documents the general nature of work but is not intended to be a comprehensive list of all activities, duties and responsibilities required of job incumbent. Consequently, job incumbent may be required to perform other duties as assigned.

Position Requirements:

- Knowledge of the principles of physics, nuclear chemistry, metallurgy and related fields. Considerable skill is required in communicating with physicists as well as various laboratory techniques of physics and radio-chemistry.
- Excellent organizational skills in coordinating work for many individuals.
- Requires laboratory experience in devising solutions to difficult technical problems.

As an equal employment opportunity and affirmative action employer, Argonne National Laboratory is committed to a diverse and inclusive workplace that fosters collaborative scientific discovery and innovation. In support of this commitment, Argonne encourages minorities, women, veterans and individuals with disabilities to apply for employment. Argonne considers all qualified applicants for employment without regard to age, ancestry, citizenship status, color, disability, gender, gender identity, genetic information, marital status, national origin, pregnancy, race, religion, sexual orientation, veteran status or any other characteristic protected by law.

Nuclear Engineering Faculty Positions,
Assistant/Associate/ Full Professor, University of Utah

The Department of Civil and Environmental Engineering (CVEEN) invites applications for two tenure-track assistant/associate professor faculty positions for its Nuclear Engineering Program (UNEP). Positions will be open to all outstanding areas of nuclear engineering although emphasis will be given to those with experience in reactor physics, reactor design, radiation detection and nuclear securities (i.e. nuclear safeguards or forensics). Candidates should have a Ph.D. in Nuclear Engineering or closely related field such as Radiochemistry or Nuclear Physics. Exceptional recent graduates and those with postdoctoral experience are highly encouraged to apply. Successful applicants must demonstrate their ability to develop an independent, externally funded research program, supervise graduate and undergraduate students, and teach at least one of our four core courses at the graduate level: Radiation Interactions, Reactor Physics, Health Physics, and Radiation Detection.

As part of the College of Engineering, faculty specializing in Nuclear Engineering maintain strong interdisciplinary collaborations with other CVEEN faculty as well as faculty across campus in fields such as metallurgical engineering, chemical engineering, mechanical engineering, chemistry, physics, and radiobiology. Currently, UNEP offers an undergraduate minor, non-thesis M.S., and Ph.D. degree in Nuclear Engineering. It is one of only thirteen Universities with an operating TRIGA reactor in the United States. The 100 kW Modified Mark I TRIGA Reactor is instrumental for student training, research, and isotope production. In addition to the reactor facility, faculty members within UNEP have access to many user and core facilities on campus including but not limited to the Micron Microscopy and Nanofab Facility with Surface Analysis Laboratory, Nuclear Magnetic Resonance Facility, Scientific and Computing Institute, and Center for High Performance Computing. Additional core facilities may be found at http://cores.utah.edu/.

The University of Utah is located in Salt Lake City, site of the 2002 Winter Olympics, at the foot of the Wasatch Mountains. Adjacent to the campus is a Research Park, home to more than 50 businesses with close research and operational ties to the University. It consistently ranks among the top academic institutions for creating startup companies based on university technology. Salt Lake City is the state capital and home to many businesses and nonprofit organizations. It is known as a hotbed for technology-oriented business startups that provide great opportunities for student learning and research. The metropolitan area has a population of approximately 1.1 million residents and is a major urban center in the intermountain west. Salt Lake City has extensive arts and cultural activities and a major airport close to downtown. It is at the foot of the Rocky Mountains and has four distinct seasons, including mild winters and warm summers, and offers excellent opportunities for outdoor recreation, including easy access to the mountains, the red rock country of the Colorado Plateau, and eight national parks. The state of Utah has been recognized numerous times as a top state for business and careers.

The initial screening of applicants will begin on December 1, 2017 and continue until the positions are filled. Successful applicants may begin at the start August 15, 2018. Electronic application materials should include a cover letter, curriculum vitae, research statement, teaching statement, and contact information for three references. Questions may be directed to the chair of the search committee, Luther McDonald (luther.mcdonald@utah.edu). Please submit all application materials online to http://utah.peopleadmin.com/postings/68324.

The University of Utah is an Equal Opportunity/Affirmative Action employer and educator. Minorities, women, veterans, and those with disabilities are strongly encouraged to apply. Veterans' preference is extended to qualified veterans. Reasonable disability accommodations will be provided with adequate notice. For additional information about the University's commitment to equal opportunity and access see: http://www.utah.edu/nondiscrimination/.

PhD Research Opportunities at Flinders University
Adelaide, South Australia

Flinders University is seeking PhD students for the projects as part of the program entitled "**Assessing Radionuclides and Developing Frameworks for South Australia's Environment Surrounding Uranium Mining Sites**".

Radiation chemistry and environmental radiation has many studies with supporting data, modeling and analysis in Europe and North America. However, comprehensive and long term projects on the existence and movement of radionuclides in Australia's arid environments are poorly documented and understood. In particular, radon chemistry within various environmental materials is not well understood. This project builds capacity in nuclear chemistry and environmental radiation sector, and will build links and promote engagement with the mining industry sector and research organisations. The PhD candidates will examine the role of radon in the environment on mining sites, in particular the solubility of radon gas process liquors and the rate at which radon is exhaled from them, including the partitioning coefficient between liquor and gas phase in realistic conditions. Candidates will also investigate the transmissivity of radon gas through clay barriers of varying thickness and understanding the mobility of other radionuclides through clay and other soil and rock types.

Flinders University has a recognised reputation for research excellence across a range of disciplines and areas of intellectual enquiry. Flinders University has an acknowledged record of working in partnership with other universities, state and federal governments, industry and community to provide scholarship and focussed research solutions to address the challenges of the 21st Century. A particular area of research strength and investment within Flinders University is nuclear science and chemistry and related fields in environmental science as part of the Forensic and Analytical Chemistry research area in the College of Science and Engineering. The National Centre for Groundwater Research and Training (NCGRT) has expertise in the broader context to processes in the environmental context. Flinders University has a dynamic and highly active research environment, and the College of Science and Engineering also enjoys strong, long term research collaborations with national facilities such as ANSTO and the Australian Synchrotron in analysis of complex samples. In addition, Flinders University is also a node in the ARC Australian Copper Uranium Industrial Research Hub at Flinders University, led by Professor Pring.

Starting period: End of 2017
Applicants will typically have a bachelor degree with first-class honours, or the equivalent (e.g. Masters by Research), with satisfactory research preparation demonstrated. Students must demonstrate English proficiency.

Skills: the PhD candidates should have skills in analytical and inorganic chemistry, preferably with experience in radiochemistry and modeling. The student will be trained in the use of equipment and handling of radionuclides.

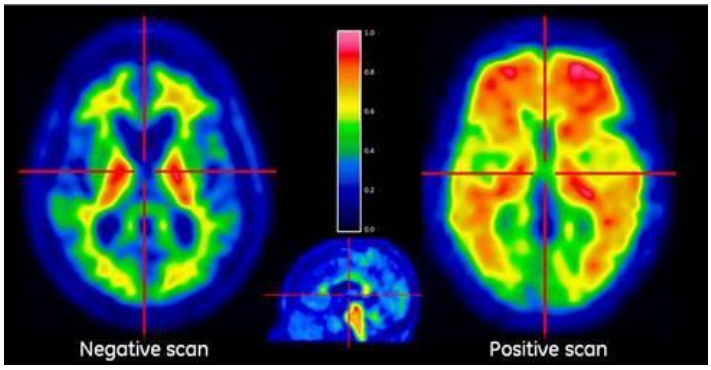
Supervision: Associate Professor Rachel Popelka-Filcoff and Professor Allan Pring.

Funding: The project, part of a three-year program between Flinders University, BHP, the Department of State Development Mining and Petroleum Services Centre of Excellence and environmental radiation and analytical consultants JRHC Enterprises, will educate the next generation of postgraduate students towards employment in the industry. Students can apply for international and domestic scholarships at Flinders University or may attend through a cotutelle agreement.

Contact: Associate Professor Rachel Popelka-Filcoff, School of Chemical and Physical Sciences, Flinders University, GPO Box 2100 Adelaide, SA 5001 - rachel.popelkafilcoff@flinders.edu.au

CALL FOR PAPERS

Radiopharmaceutical Chemistry Symposium



Flutemetamol (^{18}F) images of subjects with and without Alzheimer's Disease[1]

The NUCL, FLUO, MEDI, and INOR divisions are once again sponsoring a symposium highlighting the latest developments in Radiopharmaceutical Chemistry. This edition of the symposium will be held at the Spring ACS National Meeting in New Orleans, March 18-22, 2018. A special emphasis of this symposium will be to highlight Alan Davison's many contributions to the development of metal-based radiopharmaceuticals. The Symposium will feature both invited and contributed talks on topics including: 1) The production of radionuclides of radiopharmaceutical interest, 2) Radiometal-based radiopharmaceuticals, and 3) New and exciting ^{18}F and ^{11}C chemistry. As with past radiopharmaceutical chemistry symposia, we anticipate that there will be an informal mixer at the conclusion of the symposium. We look forward to your participation.

The deadline for abstract submission is October 16th, 2017.

(N.B. – Abstracts should be submitted though the **FLUORINE** division, since they are the primary sponsor of this symposium)

http://www.acs.org/content/acs/en/meetings.html

Symposium Co-organizers:

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[1] **https://www.itnonline.com/content/ge-healthcare-gains-european-approval-vizamyl-pet-imaging-agent-alzheimer%E2%80%99s-disease**