Division of Nuclear Chemistry and Technology
American Chemical Society

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

NEWSLETTER
July 2019

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

Topics

FROM THE CHAIR

Jen Shafer

Hello NUCL Colleagues! I hope your summer is treating you all well. I personally have enjoyed a bit of a break from the intensity of the semester and am grateful for the decreased committee load that comes with an academic summer. Things have finally started to warm up in Colorado and I believe we are officially out of drought for the first time in twenty years. I might also just be repeating an unvalidated rumor though…

I had the opportunity to visit the ACS Nuclear Chemistry Summer School (NCSS) in San Jose at the end of June. I would like to thank everybody who took on the service of reviewing applications for the outstanding crop of students at both summer schools. The NCSS is a vital pipeline for educating undergraduate students on the opportunities available to them as nuclear & radiochemists since its inception ~35 years ago.

We are currently looking for somebody, or perhaps several people, to help with instruction at the San Jose site. Lynn Francesconi is the new National Summer School Director. If you have ideas for people that might be appropriate for this role, I encourage you to reach out to Lynn (lfrances@hunter.cuny.edu). The next major NUCL ACS gathering with be the ACS National Meeting in San Diego. I believe we have about 80 abstracts submitted in areas ranging from celebrating the "Centennial of Rutherford's first nuclear reaction" to "Molten Salt Reactor Chemistry". Our Social Hour for the San Diego meeting is being organized by Gian Surbella from Pacific Northwest National Laboratory. We are still working on identifying the venue and specific time, but we will plan for Tuesday evening of the meeting. Please pay attention to announcements at the meeting, social media, and, of course, the NUCL Business hour for further details.

The breath of programming at the National meetings is something that I always enjoy, and we are very fortunate to have our diligent Program Chairs, Amy Hixon and John Auxier. While programming for the Spring 2020 meeting is set, I encourage you to reach out to John Auxier or Tori Forbes if you have ideas for Fall 2020 programming in San Francisco.

Regarding administrative matters, the revisions to the bylaws were accepted in a landslide with >97% of the ballots unanimously voting in favor of all revisions. The new bylaws can be found here: http://www.nucl-acs.org/wp-content/uploads/2019/05/NUCL-Proposed-New-Bylaws.pdf.

Thank you to everyone who took time to mail in your ballots. We look forward to being a division that can have valid online elections and official stances on issues such as discrimination and harassment to help set a tone of professionalism for everyone in our fantastic subdiscipline of chemistry.

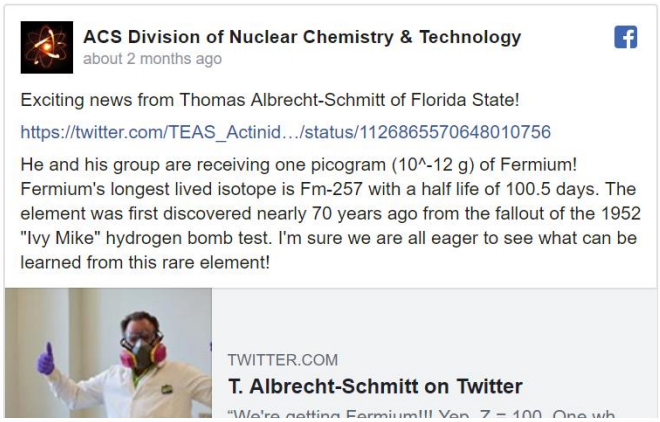
Please pay attention to a new section of the newsletter focusing on the Division's social media presence. Angus Koller (angus.koller@stonybrook.edu) has been managing both the Facebook and Twitter pages for the division. I encourage you to reach out to him if you have ideas for social media content and please see below for examples of his efforts.

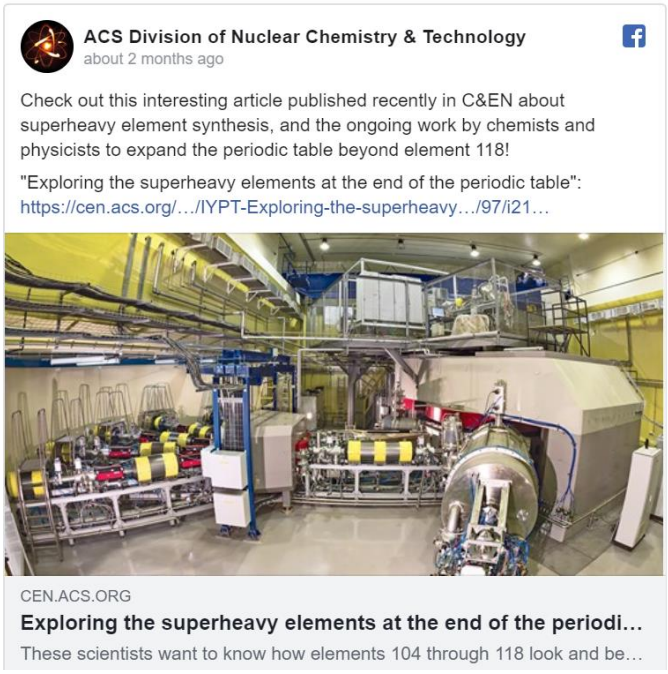
Another matter that continues to occupy the concerns of NUCL Executive Leadership is sustained funding for the National ACS Glenn T. Seaborg Award for Nuclear Chemistry. Division Treasurer Brian Powell has been leading an effort to coordinate our fundraising effort. If you have donors you would like contacted, I would ask that you please contact Brian so we can have a coordinated fundraising effort (bpowell@clemson@edu).

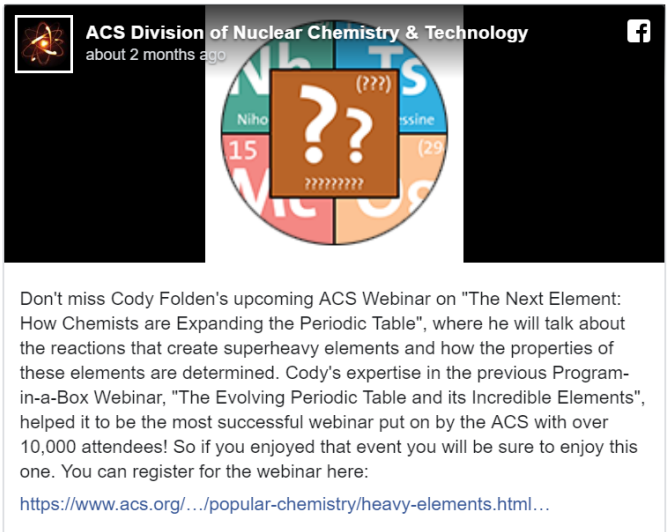
Finally, please do not hesitate to contact me with concerns, comments and information that will be useful to the NUCL Division. I welcome your feedback and input.

NUCL SOCIAL MEDIA
Angus Koller

My name is Angus Koller, and I will be attending Stony Brook University to pursue my PhD in nuclear chemistry, and I am also acting as NUCL division social media operator. I am currently looking for more posts to add to our Facebook (ACS Division of Nuclear Chemistry & Technology) and Twitter (@ACSNUCL) pages, and would love suggestions for posts. Some topics I'm looking for are interesting research/activities from your lab, nuclear chemistry related posts or articles, or events pertaining to the division. Here's a few posts from the Facebook page as examples:







If you have any ideas for social media posts please email me at angus.koller@stonybrook.edu and include "NUCL Post" in the subject line.

NATIONAL MEETING PROGRAMMING

FALL 2019 – San Diego, CA
August 25 - 29, 2019
Theme: Chemistry of Water

The 258th ACS National Meeting and Exposition will be held August 25-29, 2019 in San Diego, CA. Symposia are listed below. Abstract submission has closed. Please contact John Auxier II (jauxier@lanl.gov) for more information.

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

SPRING 2020 – Philadelphia, PA
March 22 – 26, 2020
Theme: Macromolecular Chemistry: The Second Century

The 259th ACS National Meeting & Exposition will be held March 22-26, 2020 in Philadelphia, Pennsylvania. We are in the early planning stages for the Spring 2020 National Meeting. Symposia are listed below; abstracts will be accepted until October 14th, 2019. Please contact Amy E. Hixon (ahixon@nd.edu) for more information.

- **Macromolecular Actinide Chemistry**
  Organizers: Peter C. Burns (pburns@nd.edu) and Ginger E. Sigmon (gsigmon@nd.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 Justin Powers-Luhn (jpowersl@vols.utk.edu)

- **The Future of the Periodic Table**
  Organizers: Charles M. Folden, III (Folden@comp.tamu.edu), Jenifer Shafer (JShafer@mines.edu), and Thomas Albrecht-Schmitt (TAlbrechtSchmitt@gmail.com)

- **General Topics in Nuclear Chemistry and Technology**
  Organizer: Tori M. Forbes (tori-forbes@uiowa.edu)

- **Computational Methods for Lanthanides and Actinides**
  Organizers: Deborah Penchoff (dpenchof@utk.edu) and Charles Peterson (Charles.peterson@unt.edu)

- **Seaborg Award Symposium (TBA)**

FALL 2020 – San Francisco, CA
August 16-20, 2020
Theme: Chemistry from Bench to Market

The 260th ACS National Meeting & Exposition will be held August 16-20, 2020 in San Francisco, California. If you would like to organize a symposium for the meeting, please contact John D. Auxier, II (jauxier@lanl.gov). The Call for Papers will be submitted in November 2019 and the abstracts will be due March 2020. Currently planned symposia are:

- **Nuclear Forensics**
  Organizers: John Auxier II (jdauxier@lanl.gov) and Jennifer Erchinger (jerchinger@lanl.gov)

- **General Topics in Nuclear Chemistry and Technology**
  Organizer: Tori M. Forbes (tori-forbes@uiowa.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. If you would like to organize a symposium for this meeting, please contact Amy E. Hixon (ahixon@nd.edu). The Call for Papers will be submitted in July 2020 and abstracts will be due October 2020.

NUCL DIVISON MEMBER HIGHLIGHT

Alison Tamasi, editor

Dr. Samantha Schrell
Scientist
Los Alamos National Laboratory

Dr. Schrell started her career intending to be an inorganic chemist, and when she serendipitously ran into Tom Albrecht-Schmitt as she began her PhD studies at FSU she embarked on a laser-focused career as a solid-state actinide chemist. There she learned to deftly apply her skills as an inorganic chemist to the heavy elements of curium and californium, and has pursued this vein of research with determination through the rest of her career. Though opportunities to work with these elements are rare, she found a postdoc with Stosh Kozimor at Los Alamos National Laboratory, where she was honored with a prestigious fellowship that shares a namesake with one of her elements of interest, The Marie Curie distinguished postdoctoral Fellowship (renamed the Hoffman fellowship in 2017). In addition to allowing her to showcase and expand her talents as a radiochemist, New Mexico was a great venue for her to pursue her love of skiing in the winter and hiking and rock climbing in the summer. After her postdoc she decided to stay and transitioned to her current role as a staff scientist at LANL working on the metal production team in the pit technologies group. However, unable to resist the call of her original elements of interest, Dr. Schrell has recently accepted an opportunity to work with californium in the Medical, Industrial, & Research Isotopes group at Oak Ridge National Laboratory, where her expertise will certainly lead her to great success.

SOLICITATION FOR LEAD INSTRUCTOR FOR NCSS AT SJSU

Lynn Francesconi

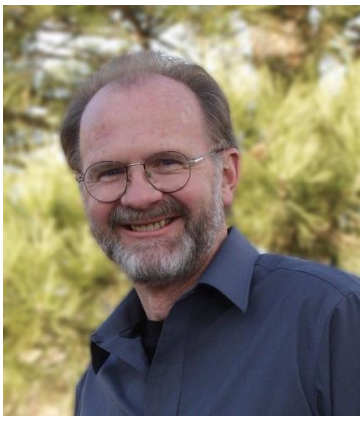
The ACS Nuclear Chemistry Summer School, founded in 1984, has provided outstanding radiochemistry and nuclear chemistry experiences/ education to talented undergraduates. The success of the NCSS depends on the capable and dedicated NUCL division members who have volunteered their time in a variety of roles that have had an indelible effect on the undergraduate students, inspiring and encouraging many of the students to pursue careers in nuclear chemistry and radiochemistry.

We are now looking for the next generation of instructor(s) for the 6-week program at the San Jose State University (SJSU) site. The Nuclear Science Facility at SJSU is well-equipped, offering wet chemistry laboratories, a counting facility, and state-of-the-art instrumentation. In addition to the lead instructor(s), the program staff includes the SJSU Site Coordinator who provides administrative support for the program, the Radiation Safety Officer who teaches the 1-credit radiation safety course and assists with laboratory activities, and two teaching assistants, who are past NCSS students selected from the previous summer school. Past course instructors have included staff from national lab employees, university professors and small college professors. This is a unique opportunity to engage with 12 students selected from a national competition and the two teaching assistants. This program has been shown to be a life-changing experience for both the students and the instructors.

Our intent is to bring at least one additional instructor to work with the current lead instructor, Trish Baisden, in summer, 2020 with the hope of transitioning the program to another lead instructor in 2021. If you are interested in being becoming the lead instructor and/or participating as a co-instructor in the program, please contact Lynn Francesconi at lfrances@hunter.cuny.edu.

NUCL AWARDS

Frank Kinard Distinguished Service Award



David E. Hobart

Congratulations to Prof. David E. Hobart (Florida State University), recipient of the 2019 W. Frank Kinard Distinguished Service Award. Prof. Hobart will receive his award at the NUCL business meeting during the ACS Fall National Meeting in San Diego.

Dave has been a member of the American Chemical Society since 1976. In the Division of Nuclear Chemistry and Technology, he has played an active role in division leadership, first serving two nonconsecutive terms as Chair of the ACS Central New Mexico Local Section and later as Chair of the NUCL Division. He co-organized the "Analytical Chemistry Symposium" at the ACS Rocky Mountain Regional Meeting and co-organized the "Analytical Chemistry in Nuclear Technology Symposium Series" at ACS National Meetings for more than a decade. He organized "The NUCL Division 50th Anniversary Celebration Symposium" and served as editor/co-author for the NUCL 50th Anniversary Special Edition Newsletter. He has been an invited speaker at numerous ACS Local, Regional, and National Meetings and particularly enjoyed speaking at many tributes to his esteemed colleagues. He also served on the NUCL Strategic Planning committee and in 2013 he was elected ACS Fellow. Dave has authored numerous technical papers in ACS and other journals and serves as an ACS journal reviewer.

Dave has worked as a heavy element research chemist for over forty years at five U.S. national laboratories. He has served as a technical consultant for the U.S. Department of Energy (DOE) Carlsbad Office on The Waste Isolation Pilot Plant and at DOE Headquarters, Washington, D.C. on the Hanford Waste Tanks Issue. In 2012, Dave retired from Los Alamos National Laboratory and moved to Florida. Later, his wife, Judy indicated that they were spending too much quality time together and that he should go find something to do! He is presently serving as Research Professor III and Chief Operations Officer for the EFRC Center for Actinide Science and Technology at Florida State University, Tallahassee. He is collaborating with the Thomas Albrecht-Schmitt Group at FSU in nurturing the next generation of nuclear scientists.

2019 ACS Fellows from NUCL Division

Division Councilor Graham Peaslee and Member Glenn Fugate are the most recent NUCL nominees to be named ACS Fellows. The Fellowships are a well-deserved tribute to their technical expertise and service.

The full list of 2019 ACS fellows can be found here: https://www.acs.org/content/acs/en/funding-and-awards/fellows/list-of-2019-acs-fellows.html?sc=190722_news_acsmters_ascfellows

Glenn Fugate

Glenn is an R&D Staff Member of the Isotope and Fuel Cycle Technology Division at Oak Ridge National Laboratory. Fugate's research spans more than 25 years and centers around nuclear safeguards, analytical chemistry, separations chemistry, and radiochemistry. In addition to his work at ORNL, he also is an adjunct faculty member at Clemson University.

Graham Peaslee

Graham is a currently a Councilor for the NUCL Division and a Professor of Experimental Nuclear Physics at the University of Notre Dame. His research interests lie at the interface between any nuclear or atomic physics measurement method and materials that impact society.

2018 Coryell Award Recipient

Nic Dronchi of Michigan State University is the 2018 Coryell Award Winner. Nic is an undergraduate student working with Greg Severin.

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).

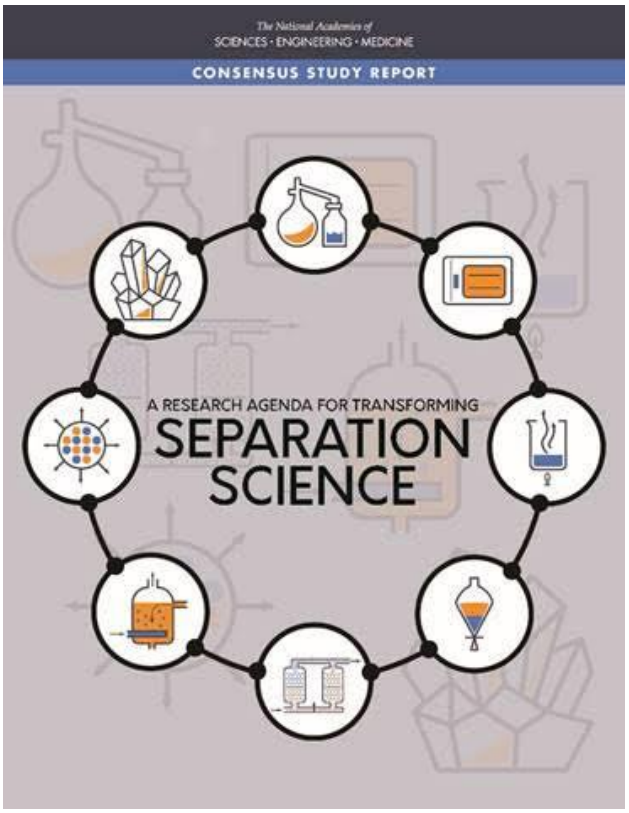
Glenn T. Seaborg Award for Nuclear Chemistry

(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, 2019. 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 2019 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 Jenifer Shafer (jshafer@mines.edu) before September 1, 2019.

NATIONAL ACADEMIES REPORT ON SEPARATION SCIENCE



A recently released report from the National Academies of Sciences, Engineering, and Medicine may be of interest to researchers pursuing the fundamental chemistry of separations: ***A Research Agenda for Transforming Separation Science***. The pdf of the prepublication version is freely available for download at https://www.nap.edu/catalog/25421/a-research-agenda-for-transforming-separation-science.

The report highlights the status of separation science today as it has progressed from major advances over the last 30 years, with substantial impacts to the economy through multiple applications in nuclear fuel cycles, chemical analysis, environmental stewardship, resource sustainability, and industry to name but a few. Most important, the report provides a research agenda that has the potential for substantially advancing the field and may therefore serve as a useful guide for educational and research purposes.

Postdoctoral Position
The University of Alabama at Birmingham

G190301- Radiochemistry and preclinical development of new radiopharmaceuticals for molecular imaging, Department of Radiology

Mentor: **Suzanne Lapi, PhD**, Professor, Department of Radiology. School of Medicine
Email: **lapi@uab.edu**

https://www.uab.edu/postdocs/post-doc-openings/postdocs-in-biomedical-sciences/494-g190301

A postdoctoral position is available immediately to join our laboratory focused on the radiochemistry and development of molecular imaging agents in oncology. Support facilities and research environment at the University of Alabama at Birmingham School of Medicine are outstanding and include a TR24 cyclotron and associated radiochemistry laboratories in addition to small animal PET/CT and other small animal imaging modalities.

Requirements:

The successful candidate will hold a PhD degree in Chemistry, Biomedical Engineering or related field. Applicants with a background in radiochemistry or molecular imaging are encouraged to apply. Applicants should demonstrate past research productivity with preference given to candidates with significant publications and interest in grant writing opportunities. Interested applicants should send a CV and cover letter to Amber Crim at **acrim13@uab.edu**.

About our Postdoc Office:

UAB is committed to the development and success of outstanding postdoctoral scientists. Here at UAB, nearly 300 postdoctoral fellows are training currently in a variety of disciplines. Competitive postdoc awards are available including internships, grant incentives, funds to enhance education and collaboration outside UAB, and teaching opportunities at local universities. There is also a Postdoc Research Day with monetary awards. The Office of Postdoctoral Education strongly encourages UAB research mentors to follow the National Research Service Award stipend level guidelines, and postdoctoral scholars qualify for health, life, and other insurances. They also have the right to participate in the university's 403(b) program and enjoy vacation, sick leave, maternity/paternity leave, and other benefits.

Assistant Professor of Radiochemistry
University of Iowa

The Department of Chemistry at the University of Iowa solicits applications to fill a tenure-track Assistant Professor position in Radiochemistry broadly defined. This is a 100% appointment to start in August of 2020. Applications are encouraged from researchers with programs focused on radioanalytical chemistry, environmental monitoring, nuclear forensics, actinide chemistry, radioisotope development, radiopharmaceuticals/therapies, or energy applications.

Applicants should clearly demonstrate potential to develop and lead a nationally-prominent, externally-funded research program and commitment to excellence in teaching chemistry to a diverse student body at both the graduate and undergraduate levels. Candidates must have a doctoral degree in chemistry or a closely related field and a promising record of scholarship and productivity. Postdoctoral or equivalent experience in an academic, government, national laboratory, or industrial setting is highly desired.

The Radiochemistry Program at the University of Iowa was established in 2012 and is quickly developing into a renowned area of strength on campus. The Chemistry Building has state-of-the-arts facilities for teaching and research, including a shared Radiochemistry Facility. Faculty within the Department of Chemistry have established ties with national laboratories, state facilities, and industrial partners and there are opportunities for collaborations with the highly-ranked University of Iowa Hospitals and Clinics. The Department of Chemistry is committed to creating a diverse team of faculty and promoting an inclusive workplace environment. The University of Iowa is an equal opportunity/affirmative action employer. All qualified applicants will receive consideration for employment without regard for race, color, religion, gender, gender identity or expression, sexual orientation, national origin, disability, age, or veteran status.

Application materials must include a cover letter describing the applicant's academic qualifications and professional experience, CV, and academic transcripts. Applicants should also provide documents that 1) describes their current expertise and future goals for an independent research program in radiochemistry; 2) states their beliefs, practices, and interests in teaching, and 3) should detail how their teaching, service, and/or scholarship has supported the success of students from backgrounds that are underrepresented in chemistry or how they would like to further the University of Iowa's commitment to diversity. Please arrange for three letters of recommendation to be sent directly to chem-facsearch@uiowa.edu. More information is available at https://jobs.uiowa.edu under requisition #73702.

Application review will begin by September 1, 2019 and will continue until the position is filled.

150 Years of the Periodic Table
Symposium at the Fall 2019 ACS National Meeting

Cosponsored by INOR and PRES
Financially supported by INOR
G. Girolami, C. J. Giunta, V. V. Mainz, *Organizers*

Coronado Room, Marriott Marquis San Diego Marina

SUNDAY AFTERNOON, Aug. 25, 2019
V. V. Mainz, *Organizer, Presiding*

1:10 Introductory Remarks.
1:15 . Trouble with triads. **W. Jensen**
1:45 . Vis tellurique of Alexandre-Émile Béguyer de Chancourtois. **C.J. Giunta**
2:15 . Periodicity in Britain: The periodic tables of Odling and Newlands. **J. Poole-Sawyer**
2:45 Intermission.
3:00 . Gustavus Detlef Hinrichs and his *Chart of the Elements*. **G.S. Girolami**
3:30 . Mendeleev in St. Petersburg: The marginality of the periodic system. **M.D. Gordin**
4:00 . Lothar Meyer's path to periodicity. **A.J. Rocke**

MONDAY MORNING, Aug. 26, 2019
C. J. Giunta, *Organizer, Presiding*

8:40 Introductory Remarks.
8:45 . Discovery of the elements predicted by Dmitri Mendeleev's table: Scandium, gallium, and germanium. **M. Orna**, M. Fontani
9:15 . Rare Earth Elements. **A. De Bettencourt Dias**
9:45 . History (and pre-history) of the discovery and chemistry of the noble gases. **J.A. Labinger**
10:15 Intermission.
10:30 . Sir John F.W. Herschel and the concept of periodicity. **G.D. Patterson, R. Brashear**
11:00 . Hydrogen, helium, and metals: When astronomy met the periodic table. **V.L. Trimble**
11:30 . Hydrogen to oganesson: A philatelic celebration of the periodic table. **D. Rabinovich**

MONDAY AFTERNOON, Aug. 26, 2019

G. Girolami, *Organizer, Presiding*
1:40 Introductory Remarks.
1:45 . Impact of 20th century physics on the periodic table and questions still outstanding in the 21st century. **E.R. Scerri**
2:15 . Uses of the Periodic System after Radioactivity and the Discovery of the Neutron: the contrasting views of Lise Meitner and Ida Noddack. **B. Van Tiggelen**
2:45 . Mary Elvira Weeks and *The Discovery of the Elements*. **V.V. Mainz**
3:15 Intermission.
3:30 . From neptunium to mendelevium: element discovery and the birth of the atomic age. **K. Chapman**
4:00 . Transactinide elements: How the 7th row of the periodic table was discovered. **D.A. Shaughnessy**
4:30 . Periodic table after period 7. **V.P. Pyykko**