

ALLISON C. PEACOCK

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PROFESSIONAL EXPERIENCE

OAK RIDGE NATIONAL LABORATORY, UT-BATTELLE

4501 Operations Group Lead, Isotope Processing and Manufacturing Division

November 2022–Present

- Lead a processing and manufacturing portfolio of multiple radioisotope production lines including accelerator-produced Ac-225, W-188, Ra-224/Pb-212 generators, and Ba-133 with a focus on safe and reliable delivery of radioisotope products.
- Lead the team responsible for dispensing of radioisotopes.
- Ensure products meet prescribed quality standards.
- Identify opportunities for continuous improvement and optimization.
- Provide mentoring and career guidance to staff.

ISOTEK SYSTEMS, LLC, MEMBER OF THE SNC-LAVALIN GROUP

Thorium Purification Manager

June 2021–Present

- Lead and manage the team responsible for the extraction and purification of Th-229 in a safe, secure, and efficient way, this team includes 3 supervisors and 11 technicians
- Work closely with facility management to ensure processes are coordinated with maintenance and security operations and in compliance with nuclear facility safety basis
- Oversee startup of the initial processing campaign for scale up of processing from glovebox operations to hot cell operations
- Responsible for validation of processing procedures which ensures that processes are translated from engineering flow sheets to operations in a manner that is conducive with repeatable and consistent radioisotope production; these processes include ion-exchange separations, dissolutions, and matrix exchanges
- Issues shift orders for guidance on the processing activities to be performed daily
- Provide technical knowledge and support for operations to improve processing and analyze efficiency of separation and purification
- Document process efficiency and batch overview in detailed process cycle reports
- Act as the liaison between customer and Isotek senior management for analytical results, technical support, and coordination of processing
- Responsible for training and mentoring junior staff and act as the Qualified Instructor for Manipulator Operations and Chemistry Basics classes
- Work as a role model with an emphasis on continued cultivation of safety culture
- DOE 'Q' Clearance

OAK RIDGE NATIONAL LABORATORY, UT-BATTELLE

Isotope Production Technical Professional

June 2015–June 2021

- Lead and supported radioisotope production and dispensing activities including production of Ac-225, Th-228/Ra-224/Pb-212 generators, Ni-63, Sr-89, Lu-177, U-233/Th-229, W-188, Ra-226, and Ac-227 for on-time shipment to customers.
- Laboratory space manager of 11 labs including a high alpha glovebox laboratory, dispensing glovebox laboratory, and the hot cell areas which is comprised of 4 hot cells, duties of which include oversight of activities and operations to help assure that hazards are identified and controlled and that the space is maintained in a safe and orderly manner, provide leadership, and act as a role model, mentor, and trainer for junior team members
- Provided technical expertise, organizational skills, and attention to detail to coordinate and develop processing schedules
- Authored numerous procedures as processes were transitioned from research to production
- Made significant contributions to the development and implementation of a current good manufacturing practice (cGMP) quality system for medical radioisotope production: provided technical expertise, composed SOPs, created a novel master batch record, managed daily operations, and participated in regulatory discussions with the FDA
- Oversaw successful completion of validation runs for inclusion in a drug master file (DMF) for submission to the FDA
- Contributed as an author and subject matter expert to the compilation and review of the DMF
- Maintained and controlled the quality system and related databases, standard operating procedures, and batch records

- Conducted research for improvement of separation and purification techniques for various isotopes
- Implemented knowledge of complexation chemistry and ion-exchange chromatography to improve separations
- Worked in radiological areas (radiation and contamination) with proper safety techniques and always putting safety culture first
- Performed work in fume hoods, radiological fume hoods, gloveboxes, and hot cells with advanced skills in using manipulators and remote operations
- Worked in a strong team environment where continual learning is emphasized and valued
- Presented research both in poster format and orally

Post-Bachelors Research Associate

October 2014–June 2015

- Researched techniques for separation of radium and barium as well as separation of actinium and thorium in various citrate media using ion-exchange chromatography and analyzing data via gamma ray spectroscopy
- Worked independently in a radiological fume hood and glovebox for experimental work
- Kept records of research using logbooks and implementing organizational skills for ensuring proper control of data
- Research involved knowledge of separation techniques, complexation chemistry, and analysis of radioisotopes

OAK RIDGE NATIONAL LABORATORY, ORAU

Higher Education Research Experiences Intern

June 2012–October 2014

- Performed research on the separation of radium-228 from thorium-232 using ion-exchange chromatography
- Purified radium-228 and fabricated a target for production of thorium-229 in the High Flux Isotope Reactor to measure nuclear cross-section data and organized all paperwork/certifications during target fabrication to meet the quality standards for the High Flux Isotope Reactor

EDUCATION

East Tennessee State University, Johnson City, TN

Bachelor of Science—Chemistry, May 2013

SKILLS

- Very detail oriented, meticulous, organized, and always willing to learn
- Experience writing, editing, and reviewing standard operating procedures and regulatory submissions
- Knowledge of regulations and guidances, such as 21 CFR 211, ICH Q7 (cGMP), and NQA-1
- Strong technical background and knowledge of radiochemistry and medical isotope production processes
- Skilled in gamma-ray spectroscopy, ion-exchange chromatography, and complexation chemistry
- Radiological Worker II trained with experience and expertise using gloveboxes and manipulators

ADDITIONAL LABORATORY EXPERIENCE

EAST TENNESSEE STATE UNIVERSITY

Upper-Level Chemistry Courses, including Integrated Laboratory–2012, Quantitative Analysis–2011

- Learned advanced chemistry laboratory techniques with emphasis on physics-chemical measurements
- Techniques used include data handling, report writing, and work with classical and instrumental methods such as H-1 NMR, UV-Vis spectroscopy, and GC-Mass Spectrometry
- Learned analytical techniques through various experiments where data was treated statistically and quantitative analysis was performed using spectroscopy and instrumental methods

AWARDS

2017 UT-Battelle Awards Night Recipient of Award for Technical Support for Research

Award given for dedicated technical support, including solving complex research challenges, in the successful production of actinium-227 for use in treatment of metastatic prostate cancer, an achievement that will positively impact countless cancer patients and provide the foundation for a multiyear production effort that will create a significant revenue stream for the laboratory.

PUBLICATIONS

Toro-González, Miguel, **Allison Peacock**, Andrew Miskowicz, David A. Cullen, Roy Copping, Saed Mirzadeh, and Sandra M. Davern. 2021. "Tailoring the Radionuclide Encapsulation and Surface Chemistry of La(²²³Ra)VO₄ Nanoparticles for Targeted Alpha Therapy" *Journal of Nanotheranostics* 2, no. 1: 33-50. <https://doi.org/10.3390/jnt2010003>

Tara Mastren, Benjamin W. Stein, T. Parker, Valery Radchenko, Roy Copping, **Allison Owens**, Lance E. Wyant, Mark Brugh, Stosh A. Kozimor, F. Nortier, Eva Birnbaum, Kevin John, Michael Fassbender. (2018). Separation of Protactinium Employing Sulfur-Based Extraction Chromatographic Resins. *Analytical Chemistry*. 90. 10.1021/acs.analchem.8b01380.

Tara Mastren, Valery Radchenko, Jonathan Engle, John Weidner, **Allison Owens**, Lance E. Wyant, Roy Copping, Mark Brugh, F. Nortier, Eva Birnbaum, Kevin John, Michael Fassbender. (2018). Chromatographic separation of the theranostic radionuclide ¹¹¹Ag from a proton irradiated thorium matrix. *Analytica Chimica Acta*. 998. 75-82. 10.1016/j.aca.2017.10.020.

Tara Mastren, Valery Radchenko, **Allison Owens**, Roy Copping, Rose Boll, Justin Griswold, Saed Mirzadeh, Lance Wyant, Mark Brugh, Johnathan Engle, Francois Nortier, Eva Birnbaum, Kevin John, Michael Fassbender. (2017). Simultaneous Separation of Actinium and Radium Isotopes from a Proton Irradiated Thorium Matrix. *Scientific Reports*, 7, 8216. <http://doi.org/10.1038/s41598-017-08506-9>.

Valery Radchenko, Tara Mastren, Catherine A.L. Meyer, Alexander S. Ivanov, Vyacheslav S. Bryantsev, Roy Copping, David Denton, Jonathan W. Engle, Justin R. Griswold, Karen Murphy, Justin J. Wilson, **Allison Owens**, Lance Wyant, Eva R. Birnbaum, Jonathan Fitzsimmons, Dmitri Medvedev, Cathy S. Cutler, Leonard F. Mausner, Meiring F. Nortier, Kevin D. John, Saed Mirzadeh, Michael E. Fassbender. Radiometric evaluation of diglycolamide resins for the chromatographic separation of actinium from fission product lanthanides, *Talanta*, Volume 175, 2017, Pages 318-324, ISSN 0039-9140, <http://dx.doi.org/10.1016/j.talanta.2017.07.057>.

J.R. Griswold, D.G. Medvedev, J.W. Engle, R. Copping, J.M. Fitzsimmons, V. Radchenko, J.C. Cooley, M.E. Fassbender, D.L. Denton, K.E. Murphy, **A.C. Owens**, E.R. Birnbaum, K.D. John, F.M. Nortier, D.W. Stracener, L.H. Heilbronn, L.F. Mausner, S. Mirzadeh, Large scale accelerator production of ²²⁵Ac: Effective cross sections for 78–192 MeV protons incident on ²³²Th targets, *Applied Radiation and Isotopes*, Volume 118, 366-374 (2016).

Hogle, S., Boll, R.A., Murphy, K., Denton, D., **Owens, A.**, Haverlock, T.J., Garland, M., Mirzadeh, S. Reactor production of Thorium-229. *Applied Radiation and Isotopes*. Volume 114, 19-27 (2016).

REFERENCES

Available upon request.