

Stacy L. Queern, Ph.D.

• 618-340-3550 • stacy.queern@gmail.com •

Education:

Washington University in St. Louis, St. Louis, MO

Doctor of Philosophy, 2018

Concentration (GPA): Nuclear Chemistry (3.8/4.0)

Research: ⁸⁹Zr-nano-hydroxyapatite-phospha-TOC as a new PET imaging agent

Southern Illinois University at Edwardsville, Edwardsville, IL

Bachelors of Science, 2013

Major: Chemistry, Mathematical Studies

Minor: Physics

Research: Location of transition states of organometallics via computational chemistry;
Mathematical modeling of immune system versus tumor growth

Southwestern Illinois College, Belleville, IL

Associate of Science, 2008

Associate of Engineering: Chemical, 2010

Experience:

6/2022-Present

R&D Staff Radiochemist (RPD Group), Oak Ridge National Laboratory
Continue R&D associate staff responsibilities. Develop new research proposals. Guide and mentor junior staff, students and postdocs. Serve on interview committees. Represent the division, section or group for recruiting and assessment and planning committees. Increase potential collaborations by interacting with senior internal and external candidates. Maintain strong communications with stockholders, customers, management and staff.

8/2020-6/2022

R&D Associate Staff Radiochemist (EIR Group), Oak Ridge National Laboratory
Product manager or principal investigator for Ni-63, Ho-166m, Pm-147 and C-14. Backup principal investigator for Ac-225 cGMP. Lab space manager for labs in a Cat II nuclear facility. Maintain the ICP-OES instrument. Develop cost studies, processing work plans, safety documentation, status reporting, training and operation protocols, separations, purification, quantification, and handling of radioisotopes. Maintain strong communication with all personnel, a clean and safe lab, manage participates and required training, and follow protocols to remove legacy. Maintain training to perform work safely in a fume hood, gloveboxes, shielded hot cells and on the benchtop. Handling and processing of radioactive materials and hazardous chemicals. Assisted in target fabrication, HFIR target packages, troubleshoot production issues, support technical work and efforts to bring the program up to cGMP including writing the main portion of the drug master file for the FDA.

1/2019-8/2020

Postdoctoral Research Assistant (MIRI Group), Oak Ridge National Laboratory
Chemical separation of promethium-147 from neodymium on tracer level and production scale levels. Exposure to Scale (Origen) and MCNP software. Maintain strong communication with PI and group leader. Write monthly report summaries for project progress. Assist in bringing an ICP-OES on and develop operating and training protocols. Assist in the target fabrication for holmium-

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166m production. Maintain up-to-date training for radiation, radioactive and chemical hoods and gloveboxes, nuclear criticality safety, and the appropriate facility access. Trained on the actinium-225 production and cGMP process.

- 12/2013-1/2019 **Graduate Research Assistant (Lapi Group)**, University of Alabama at Birmingham, Washington University in St. Louis (12/2013-12/2015)
Development of new class of ^{89}Zr radiotracers for PET imaging and researching new methods of production for radionuclides including ^{89}Zr and ^{15}O . Supervision and training of undergraduate students in radioisotope development and radioanalytical techniques. Assist in the new laboratory setup, writing procedures, and setting up chemical and radioactive guidelines. Manage instrumentation and users, develop operating and training procedures, and maintain the ICP-MS.
- 06/2017-08/2017 **Summer Research**, Brookhaven National Laboratory, Shirley, NY
Investigate the distribution coefficients for different transition metals, solvent determination for generator elutions, setup and evaluation of generators. Supervision and training of summer interns in proper laboratory techniques and concepts.
- 08/2013-12/2015 **Teaching Assistant**, Washington University in St. Louis
Teach undergraduate level chemistry labs: Freshman Chemistry, Nuclear Chemistry. Supervise labs and grade exams, labs, and homework.
- 02/2012-08/2013 **Intern**, Tripos-Certara, St. Louis, MO
Quality control analyst for pharmaceutical modeling and simulation software development for SYBYL and Muse software on Windows, MAC, and Linux.
- 06/2013-08/2013 **Peer Tutor Specialist**, Southwestern Illinois College, Granite City, IL
Mathematics and Science Specialist for Southwestern Illinois College Learning Center. Tutor all areas of math and science offered by the college. Assist student workers/peer tutors when needed.
- 08/2008 – 01/2011 **Peer Tutor**, Southwestern Illinois College, Belleville, IL
Tutor: Chemistry, Mathematics, Biology and Physics
- 11/2003 – 09/2008 **Dispatcher**, MCSD, Waterloo, IL
Primary task was answering calls including 911, the county sheriff landline, and the radio transmissions for all emergency personal including EMS, fire, multiple police departments and county coroner. Manage and evaluate crisis situations. Dispatch proper personal including EMS, fire, and police. Responsibilities included maintaining the safety of responding personnel and mitigating and unforeseen risk. Manage the dispatch center which included supervising inmates, assist in registering inmate, data entry, receiving bond payment for prisoners. Continuous education to maintain all license and certificates, and to learn about evolving criminal activities that would help in the risk assessment process.

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- Other Experience:**
- Office Manager**, Traube Tent, Columbia, IL (~2 years)
Quoting products and services, scheduling service and product delivery and set up, maintaining an inventory log, and other administration duties such as payroll, daily reports, data entry, field calls, maintain other work documentations.
- Associate Manager**, Fazoli's, Waco, Tx and Fairview Heights, IL (~2 years)
Customer service, employee management including hiring, termination, training, and scheduling, store management including daily operations, opening and closing the restaurant and inventory records.
- Publications:**
- Queern, S. L.**, Cardman, R., Welder, A., Loveless, C. S., Shepherd, M. R., Lapi, S. E. (2019) Production of ^{15}O for medical applications via the $^{16}\text{O}(\gamma, n)^{15}\text{O}$ reaction
Journal of Nuclear Medicine; 60 (3); 424-428
- Queern, S. L.**, (2018) Radiolabeled nanohydroxyapatite as a platform for the development of new PET imaging agents
Arts & Sciences Electronic Theses and Dissertations, 1712
- Queern, S. L.**, Aweda, T. A., Massicano, A. V. F., Clanton, N. A., Sayed, R. E., Sader, J. A., Zyuzin, A., Lapi, S. E. (2017) Production of Zr-89 using sputtered yttrium coin targets
Nuclear Medicine and Biology; 50; 11-16
- Queern, S. L.**, Aweda, T. A., Burkemper, J. L., Ketring, A., Lapi, S. E. (2016) Preliminary studies of ^{89}Zr -Nano-Hydroxyapatite as a new platform for targeted PET agents
Journal of Nuclear Medicine; 87(supplement 2); 385
- Aweda, T. A., Muftuler, F. Z. B., Massicano, A. V. F., Gadhia, D., **Queern, S. L.**, McCarthy, K. A., Bandyopadhyay, A., Gao, J., Lapi, S. E. (2019) Radiolabeled cationic peptides for targeted imaging of infection
Contrast Media Mol I; 2019; 1-11
- Sayed, R. E., Massicano, A. V. F., **Queern, S. L.**, Loveless, C. S., Lapi, S. E. (2019) Manganese-52 production cross-section measurements via irradiation of natural chromium targets up to 20 MeV
Appl Radiat Isot; 147; 165-170
- Loveless, C. S., Radford, L. L., Ferran, S. J., **Queern, S. L.**, Shepherd, M. R., Lapi, S. E. (2019) Photonuclear production, chemistry, and in vitro evaluation of the theranostic radionuclide ^{47}Sc
EJNMMI Research; 9:42

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Crawford, C. L., Dalecki, A. G., Narmore, W. T., Hoff, J., Hargett, A. H., Renfrow, M. B., Zhang, M., Kalubowilage, M., Bossmann, S. H., **Queern, S. L.**, Lapi, S. E., Hunter, R. N., Bao, D., Augelli-Szafran, C. E., Kutsch, O., Wolschendorf, F. (2019) Pyrazolopyrimidinones, a novel class of copper-dependent bactericidal antibiotics against multi-drug resistant *S. aureus*

Metallomics: Integrated Biometal Science; 11 (4); 784-798

Schoonover, K. E., **Queern S. L.**, Lapi, S. E., Roberts, R. C. (2020) Impaired copper transport in schizophrenia results in a copper-deficient brain state: A new side to the dysbindin story
World J Biol Psychiatry; 21(1); 13-28

Schoonover, K. E., McMeekin, L. J., Farmer, C. B., Varghese, N. E., **Queern, S. L.**, Lapi, S. E., Cowell, R. M., Roberts, R. C. (2020) Interactions between knockout of schizophrenia risk factor Dysbindin-1 and copper metabolism in mice

Brain Research Bulletin; 164;339-349

Other Publications:

Allen, M., Hunley, R. D., **Queern, S. L.**, (2022) Solvent Extraction of Adjacent Lanthanides.
SULI Student Report

Sadergaski, L. R., Andrews, H. B., Wilson, K., **Queern, S. L.**, Hunley, R. D., (2022) Feasibility Study of Spectrophotometry to Support a Promethium Production Program at ORNL.
ORNL Technical Manuscript; ORNL/TM-2022/2505

Queern, S. L., Green, H. M., Conner, J. D., Foster, C. J., Russell, N. G., (2021) 2020 ⁶³Ni Campaign: Target Fabrication. **ORNL Technical Manuscript**; ORNL/TM-2021/2027

Du, M., Wyant, L., Walker, T., Bruffey, S., Gonzalez, M. T., **Queern, S. L.**, Griswold, J. R. (2021) Renovations of ORNL ¹⁸⁸W Process. **ORNL Technical Manuscript**; ORNL/TM-2021/1997

Braatz, A. D., Walker, T. B., Griswold, J. R., **Queern, S. L.**, Kimberlin, A., Giuliano, D. R. (2020) Development of a flow sheet and centrifugal contactor for the purification of Pm from Nd targets. **ORNL Technical Manuscript**; ORNL/TM-2020/1467

Hunley, R. D., **Queern, S. L.**, Mayes, R. T., Hogle, S. L., Lewis, B. E. (2020) Feasibility of production and processing of hundreds of kilograms of Pm-147 at ORNL for beta voltaic battery applications. **ORNL Sensitivity Review**

Queern, S. L., Harvey, L. K., Benny, P. D., Souders, A., Du, M., (2020) Drug Master File for Ac-225 (Th-229 decay product). **Food and Drug Administration Regulatory Document**

Oral Presentations:

Nickel-63 production at Oak Ridge National Laboratory
Stacy L. Queern
ACS Spring 2022, San Diego, CA, March 2022

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Production of ^{89}Zr and development of nHAp molecular imaging agents

S. L. Queern, A. V. F. Massicano, S. E. Lapi

CAARI 2018, Grapevine, TX, August 2018

Radiochemistry Research as a Graduate Student at WUSTL and UAB

S. L. Queern, S. E. Lapi

NCSS-BNL 2018, Shirley, NY, July 2018

Inorganic ion-exchangers for radiochemical separations of Y/Zr and Ti/Sc

S. L. Queern, C. L. Manderbach, C. S. Cutler, D. G. Medvedev, S. E. Lapi, J. M. Fitzsimmons

255th ACS National Meeting, New Orleans, LA, Oral Presentation, March 2018

Graduate studies and the facilities at WUSTL and UAB

S. L. Queern, S. E. Lapi

NCSS-BNL 2017, Shirley, NY, July 2017

Optimal conditions for the production of Zr-89 using ACSI coin target

S. L. Queern, T. A. Aweda, R. El Sayed, H. Doane, J. Rider, B. Brooks, J. A. Sader, A. Zyuzin,

S. E. Lapi

WTTC16 Conference, Santa Fe, NM, August 2016

Preliminary studies of ^{89}Zr -Nano-Hydroxyapatite as a platform for targeted PET Agents

S. L. Queern, T. A. Aweda, J. L. Burkemper, A. R. Ketrung, S. E. Lapi

SNMMI Conference, San Diego, CA, June 2016

Poster Presentations:

Separating Unruly Neighbors, Pm and Nd

S. L. Queern, R. D. Hunley

Pacificchem 2021, Honolulu, HI, December 2021

Scaled up research and development for the production of promethium-147

S. L. Queern, R. D. Hunley, R. A. Boll

DOE Isotope Program Review, Oak Ridge, TN, November 2019

^{89}Zr -nanohydroxyapatite-phospha-TOC as a new PET imaging agent

S. L. Queern, N. A. Clanton, A. V. F. Massicano, J. L. Burkemper, S. E. Lapi

UAB Inaugural Symposium, Birmingham, AL, October 2017

^{89}Zr -nanohydroxyapatite-phospha-TOC as a new PET imaging agent

S. L. Queern, N. A. Clanton, A. V. F. Massicano, J. L. Burkemper, S. E. Lapi

ISRS Conference, Dresden, Germany, May 2018

Fast neutron irradiation of terbium and gadolinium to produce europium-156

S. L. Queern, J. W. Engle, F. M. Nortier, E.R. Birnbaum, S. E. Lapi

NSSC-LANL Summer School, Los Alamos, NM, August 2015

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Exploration of ^{89}Zr -Nano-Hydroxyapatite as a PET tracer

S. L. Queern, T. A. Aweda, S. E. Lapi

ISRS Conference, Columbia, MO, May 2015

Funding Applications:

FY23 Core R&D

Investigating the feasibility of electrochemical lanthanide separations from existing waste streams, September 2022

LDRD FY22 Self-driven Experiments for Science

Autonomously controlled cell for electrochemical synthesis and separations (ACCESS), July 2021

SNMMI Predoctoral Molecular Imaging Scholar Program

Development of Radiolabeled Targeted Agents based on Nanohydroxyapatite for Imaging and Therapy, February 2017

DOE Office of Science Graduate Student Research (SCCSR) Program

Evaluation of Ge/Ga-68, Ac/Bi-213, Ra/Ac-225 and Ti/Sc-44 generators and radiolabeling characteristics, November 2016

Research Skills:

- Proper handling of radioactivity. Experienced in radiochemical separations, radiolabeling and stability studies.
- Computational calculations and simulations: Scale, MCNP, Spartan, SRIM/TRIM, GEANT4, SYBYL, and Mathcad.
- Analytical Instrumentation: HPGe gamma spectroscopy, HPLC separations, TLC, DLS, TEM, SEM, ICP-MS, ICP-OES, QTOF and Gamma Counter. Developing targets for specific radioisotopes.
- Introductory programming skills: C++, python, matlab, root, Linux and Unix navigation and commands.

Appointments:

ORNL Seed Review Committee, 2022

ORNL Gives Committee, 2021, 2022

Awards:

Supplement Performance Award, 2021 (ORNL, RSTD)

Alavi-Mandell Award, 2020 (SNMMI, JNM Article)

ISRS 2017 DOE Travel Bursary Award, 2017 (*ISRS*)

WTTC16 DOE Travel Bursary Award, 2016 (*WTTC*)

Outstanding Teaching Assistant Award, 2015 (*WUSTL*)

ISRS 2015 DOE Travel Bursary Award, 2015 (*ISRS*)

Ella Ott Weisman Award, 2013 (*SIUE*)

Physical Chemistry Award, 2012 (*SIUE*)

Outstanding Math Student Award, 2009 (*SWIC*)

Who's Who Among Students in American Junior College, 2009 (*SWIC*)

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- Certifications:**
- Crucial Conversations for Mastering Dialogue**, 2022 (ORNL)
 - Project Management Essentials**, 2022 (ORNL)
 - Local Emergency Squad Training**, 2022 (ORNL)
 - Manipulator Operations**, 2021 (ORNL)
 - DOT Radioactive Materials Transport – Non shipper**, 2021 (ORNL, Current)
 - Lab Space Manager**, 2021 (ORNL)
 - On-the-job Instructor Training**, 2020 (ORNL)
 - General Respirator Training and Fit Test**, 2019 (ORNL, Current)
 - Nuclear Criticality Safety Fundamentals**, 2019 (ORNL, Current)
 - Radiation Worker 2 Training**, 2019 (ORNL, Current)
 - SCALE/ORIGEN Standalone Fuel Depletion, Activation, and Source Term Analysis**, 2019 (ORNL)
 - Radiation Safety for Handling PET Radioactive Material Certification**, 2014 (*WUSTL*)
 - Radiation Safety for Handling Radioactive Material Certification**, 2014 (*WUSTL*)
 - National Teaching and Learning Certification**, 2011 (*SIUE*)
 - Tutor Certification**, Level I, 2009 (*SWIC*)
- Memberships:**
- American Chemical Society**, Since 2010
 - American Nuclear Society**, Since 2021