

KALIE KNECHT

Berkeley, CA · kalie@berkeley.edu · kalie.info

EDUCATION

University of California

Doctor of Philosophy in Nuclear Engineering

Berkeley, CA

August 2019 - Present

- Nuclear Science and Security Consortium Fellow
- Minors: Public Policy and Computer Science

University of Tennessee

Bachelor's of Science in Honors Nuclear Engineering *GPA: 3.96*

Knoxville, TN

August 2014 - May 2019

- Completed a reactor physics laboratory using the VR-1 reactor at the Czech Technical University
- Visited the Vienna United Nations complex and attended talks by the IAEA and CTBTO

SKILLS

Programming Languages:	Python and Fortran
Code Proficiencies:	MCNP, GOTHIC, and Cyclus
Software Proficiencies:	Microsoft Office, OriginPro, CrystalDiffract, MATLAB, and CMPR
Operating Systems:	Windows, Mac, and Linux
Laboratory Skills:	Solid State Sample Synthesis, X-ray Diffraction, Radiation Measurements, and Gamma Ray Spectrum Analysis

EXPERIENCE

Lawrence Berkeley National Laboratory

Graduate Research Fellow

Berkeley, CA

August 2019 - Present

- 3D Compton image reconstruction with scene data fusion using a free-moving gamma-ray detector and auxillary contextual sensor package.
- Analyzed radiation data from Fukushima parking lot using 3D Compton imaging.

Oak Ridge National Laboratory

Safeguards & Security Technology Intern

Oak Ridge, TN

May 2019 - August 2019

- Investigated current international safeguards methods for research reactors.
- Collected data from HFIR-REDC Pu-238 production process to determine characteristics of normal operation at a research reactor with adjacent hot cell facilities.

Argonne National Laboratory

Nuclear Science & Engineering Intern

Lemont, IL

May 2018 - August 2018

- Developed code in Fortran to update SAS4A/SASSYS-1 input preprocessor to allow free format input.
- Extended unit testing capabilities of SAS4A/SASSYS-1.

University of Tennessee

Undergraduate Teaching Assistant

Knoxville, TN

August 2018 - May 2019

- Developed weekly review sessions for Thermal Science and Reactor Theory courses.
- Provided tutoring services for students enrolled in Thermal Science and Reactor Theory.

Nuclear Engineering Undergraduate Research Assistant

January 2017 - May 2019

- Evaluated transition from an open to closed nuclear fuel cycle using Cyclus.
- Interpreted data collected from Cyclus using Python.

Materials Science & Engineering Undergraduate Research Assistant

May 2015 - January 2017

- Synthesized a sample for study using conventional solid-state synthesis.
- Conducted an in-situ high temperature x-ray diffraction (XRD) study and analyzed XRD patterns.
- Created and presented a poster with a summary of all work and results at The Minerals, Metals, and Materials Society national conference in 2016.

Dominion Energy**Richmond, VA***Nuclear Safety Analysis Intern*

May 2017 - August 2017

- Analyzed Time to Core Boil (TTCB) for various RCS conditions in GOTHIC thermal-hydraulic code resulting in more accurate TTCB estimates.
- Communicated with Surry personnel to present TTCB analysis and results in a way that would be most easily used by plant operators.

Nuclear Spent Fuel Intern

August 2016 - December 2016

- Created a database of Millstone Power Station spent fuel that allows engineers to extract data for dry storage more efficiently, reducing engineering work time by at least 50%.
- Examined fuel anomalies in North Anna fuel assemblies to qualify them for dry storage.

Nuclear Core Design Intern

January 2016 - May 2016

- Reported burnup, isotopic, and monthly core follow data and ensured plant was operating as expected.
- Used CASMO to model new Surry Power Station fuel assemblies.
- Analyzed control rod drop times during startup physics testing at North Anna Unit 2.

LEADERSHIP**Society of Women Engineers***GradSWE Community Mentoring Coordinator*

October 2019 - Present

- Developed email template for communication with mentoring program participants.
- Wrote a tutorial on creating a personal website for academics to showcase professional skills and experience.
- Promoting mentoring program to graduate students during registration period.
- Brainstorming & establishing incentives to increase participation in feedback surveys.

President of UTK SWE

May 2018 - May 2019

- Raised \$11,450 for section through company sponsorships and award applications.
- Managed team of 7 officers and 10 chairs overseeing a 260 member section.
- Created Alumni Chair position to improve relations with UTK SWE Alumni.

UTK Nuclear Engineering Department*Student Ambassador*

August 2015 - May 2019

- Led tours of Nuclear Engineering facilities for prospective undergraduate and graduate students.
- Received 'Outstanding Ambassador' Award for 2017-2018 academic year.

American Nuclear Society*Secretary of UTK ANS*

May 2017 - May 2018

- Developed a points system to track the number of events that members attend and reward highly involved members with a scholarship at the end of the academic year.
- Lectured at nearby high schools about nuclear technology and career paths.

HONORS AND AWARDS**Department of Energy Integrated University Program**

Graduate Fellowship at University of Wisconsin. Declined offer.

May 2019

Undergraduate Scholarship

May 2017

Undergraduate Scholarship

May 2016

American Nuclear Society

Charles Thomas Memorial Scholarship

May 2018

Undergraduate Scholarship

May 2017

Operations & Power Division Scholarship

May 2016

University of Tennessee Department of Nuclear Engineering

Top Senior Academic Award

May 2019

Top Junior Academic Award

May 2018

Top Sophomore Academic Award

May 2017