

KALIE KNECHT

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OBJECTIVE

I am a first year graduate student at UC Berkeley wishing to share and develop skills through research internships. My interests in the nuclear engineering field are **radiation detection** for applications in **nuclear safeguards, security, and nonproliferation**.

EDUCATION

University of California Doctor of Philosophy in Nuclear Engineering	Berkeley, CA August 2019 - Present
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- Nuclear Science and Security Consortium Fellow
- Minors: Public Policy and Computer Science

University of Tennessee Bachelor's of Science in Honors Nuclear Engineering <i>GPA: 3.96</i>	Knoxville, TN August 2014 - May 2019
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- 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, Fortran, and C++
Code Proficiencies:	MCNP, GOTHIC, and Cyclus
Software:	Microsoft Office, OriginPro, CrystalDiffract, MATLAB, and CMPR
Operating Systems:	Windows, Mac, and Linux
Laboratory Skills:	Solid State Sample Synthesis and X-ray Diffraction

EXPERIENCE

Oak Ridge National Laboratory <i>Safeguards & Security Technology Intern</i>	Oak Ridge, TN May 2019 - August 2019
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- 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 <i>Nuclear Science & Engineering Intern</i>	Lemont, IL May 2018 - August 2018
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- 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 <i>Undergraduate Teaching Assistant</i>	Knoxville, TN August 2018 - May 2019
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- Developed weekly review sessions for Thermal Science and Reactor Theory courses.
- Provided tutoring services for students enrolled in Thermal Science and Reactor Theory.

<i>Nuclear Engineering Undergraduate Research Assistant</i>	January 2017 - May 2019
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- Evaluated transition from an open to closed nuclear fuel cycle using Cyclus.
- Interpreted data collected from Cyclus using Python.

<i>Materials Science & Engineering Undergraduate Research Assistant</i>	May 2015 - January 2017
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- 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*Nuclear Safety Analysis Intern***Richmond, VA**

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***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 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.
- Coordinated with nearby high school to teach a lecture about nuclear technology.

Women in Nuclear*Secretary of UTK WIN*

May 2016 - May 2017

- Organized a panel discussion meeting highlight co-op and internship experiences of nuclear engineering students.
- Coordinated an event with other engineering societies to prepare students for a job fair with workshops on elevator pitches, mock interviews, and resume critiques.

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

Graduate Fellowship at University of Wisconsin. Declined offer.

March 2019

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