

Mairead Montague

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Education

University of Tennessee, Knoxville, Expected Graduation May 2022

Ph.D. Nuclear Engineering

Overall GPA: 3.96

Relevant Coursework: Space Radiation; Radiation Protection; Nuclear Science Security & Analysis; Management of Radioactive Materials; Radiologic Assessment and Dosimetry; Detector, Localization and Nondestructive Assay of Nuclear and Radiological Materials; Global Nuclear Security Culture

University of Tennessee, Knoxville, Graduated December 2019

Master of Science in Nuclear Engineering

University of California, Berkeley, Graduated May 2018

Bachelor of Science in Nuclear Engineering

Experience

Oak Ridge National Laboratory, Oak Ridge, TN (*Graduate Research Assistant*) 6/2019 – Present

- Conducted graduate research at Oak Ridge National Laboratory with Dr. Paul Hausladen
- Developed analytic response functions for a Fast Neutron Tomography Imager for spent fuel verification and built and tested a prototype imager

Nuclear Science and Security Consortium, Berkeley, CA (*Research Assistant*) 8/2017 – Present

- Conducted graduate affiliated research at Oak Ridge National Laboratory with Dr. Paul Hausladen
- Conducted sponsored undergraduate research in conjunction with Dr. Darren Bleuel and Dr. Bethany Goldblum at Lawrence Berkeley National Laboratory 2017-2018
- Generated quarterly reports including papers and presentations on the state of research

Rad IDEAS Research Group, Knoxville, TN (*Graduate Research Assistant*) 8/22/2018 – Present

- Worked with Dr. Jason Hayward
- Conducted an experiment to determine the radiation hardness of LKH-5 scintillating glass, using a 9MV linear accelerator for use in cargo scanning.
- Prepared a 6-page paper submitted for publication

Oak Ridge Associated Universities, Oak Ridge, TN (*Fellow*) 6/14/2018 – 8/31/2018

- Updated health physics code Sources-4C as part of the Visiting Faculty Research Fellowship
- Edited Fortran source code to improve the physics model for generating neutron spectra
- Prepared a 10-page report detailing work, results, and how to replicate results

AREVA NP, Lynchburg, VA (*Intern*) 5/31/2017-8/4/2017

- Worked in the Nuclear Analysis, Codes and Maintenance group, researching differences between two thermal hydraulics codes: S-RELAP5 and RELAP5/M2-B&W and benchmarking the codes
- Prepared an 80-page document with findings that were officially submitted to records management

Bay Area Neutron Group, Berkeley, CA (*Undergraduate Research Assistant*) 9/2016 – 5/2018

- Analyzed equipment damage due to neutron bombardment in conjunction with neutron imaging research at LLNL.
- Calculated feasibility of carbon backscatter time-of-flight detector for neutron detection using Geant4 simulations

Awards

Tennessee Fellowship for Graduate Excellence 8/2018 – Present

- Awarded to the top 20 graduate students in the graduate college

Visiting Faculty Research Fellowship 6/14/2018-8/31/2018

- Awarded to students so as to pair them with professionals to perform meaningful research in the field of interest

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Organizations

- Alpha Sigma Nu Nuclear Engineering Honor Society** (*Member*) 4/2020 – Present
- Inducted in recognition of high academic performance and department engagement
- Institute for Nuclear Materials Management** (*Executive Board*) 11/2018 – Present
- President 2019-2020
 - Webmaster – Create and maintain the html website, help organize meetings, speakers, and local workshops
 - <http://volweb.utk.edu/~inmm/index.html>
- Nuclear Engineering Graduate Student Assembly** (*Vice-President/Co-Founder*) 5/2019 – Present
- Won Best Graduate Organization 2020 as awarded by the UTK Center for Student Engagement
- Women in Nuclear** (*Student Member*) 8/2018 – Present
- Participating member of the UTK WIN chapter as well as WIN National Organization
- American Nuclear Society** (*Student Member*) 8/2014 – Present
- Member at UC Berkeley, then at University of Tennessee, Knoxville chapter

Skills and Interests

- Programming in Python, Java, MATLAB, FORTRAN, HTML
- Proficient in Linux, AutoCad, Microsoft Office, LaTeX, Git, RELAP5, GEANT4, MCNP6, Sources-4C