Kayla Clements

clemekay@oregonstate.edu | (954) 654-9005

Education

PhD in Nuclear Engineering September 2020 - 2025

Oregon State University

- Advisor: Dr. Todd Palmer
- GPA: 4.00/4.00
- Christiansen Family Trust Scholar Award, Advancing Science in America Foundation

Bachelor of Science in Nuclear Engineering December 2019

University of Florida

- GPA: 3.63/4.00
- Minor: French and Francophone Studies
- Alan Jackson Memorial Scholarship Recipient

Work Experience

Graduate Research Assistant September 2020 - 2025

Oregon State University, OR

- Center for Exascale Monte Carlo Neutron Transport (CEMeNT) work developing time-dependent Monte Carlo methods that take advantage of modern computing architectures
- Using dynamic mode decomposition to form an approximate transport operator to solve for steady state alpha-eigenvalues, developing an alternative to an iterative search approach, continuing work started by Dr. Ryan McClarren

Experiment Nuclear Analyst Intern January 2020 - June 2020

Idaho National Laboratory, ID

- Continued previous INL project optimizing critical TREAT configurations by integrating upgrade fuel models into a standard TREAT model using MCNP

Reactor Physics Intern June 2019 - August 2019

Idaho National Laboratory, ID

- Modeled upgrade fuel in MCNP for TREAT, INL's Transient Reactor Test Facility, using fabrication and technical specification documents from the upgrade's previous design work
- Implemented the upgrade fuel model into an existing model of TREAT's current design and found a critical geometry
- Calculated excess reactivity, power peaking factors, and power coupling factors throughout the core using MCNP

Research Assistant April 2017 - May 2019

University of Florida, Nuclear Engineering Department

- Processed the ENDF/B-VIII.0 evaluated cross section libraries with the AMPX code system in SCALE using HiPerGator, the University of Florida's supercomputer
- Generated and tested the continuous energy and problem-independent multigroup cross section libraries to be included in the next release of SCALE

National Nuclear Data Center Intern June 2018 - August 2018

Brookhaven National Laboratory, NY

- Wrote a bash shell script to automate runs of EMPIRE, a nuclear reaction code, and analyze the data
- Generated reliable evaluated files across the whole nuclide chart, including nuclei off-stability
- Implemented a previously developed adiabatic model to describe statically-deformed nuclei in the rare-earth region and applied it to all isotopes of Gadolinium and Tungsten

MCNP Technical Project April 2018

University of Florida, Nuclear Engineering Department

- Modeled the steady-state C5G7 benchmark, a 16 assembly LWR mini-core, in MNCP
- Calculated eigenvalue and thermal and fast flux using MCNP