

KAYLEE CUNNINGHAM

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Website:



EDUCATION

Nuclear Engineering, Doctor of Philosophy, Massachusetts Institute of Technology
Nuclear Engineering, Bachelor of Science, University of Florida

Expected: May 2027
May 2022

WORK EXPERIENCE

Materials Science Intern, BWX Technologies

March 2022-August 2022

- Designed, executed, and analyzed experimentation of corrosion rates of solid solution carbide fuel for NASA's manned mission to Mars.
- Formulated and performed rheology testing on solid solution carbide surrogate materials.

Undergraduate Thesis, University of Florida

May 2021-2022

- Invented a lightweight X-ray absorption material to be used in medical settings as a replacement for lead via chemical synthesis of bismuth and iron doped carbon nanotubes.

Senior Design Materials and PRA Lead, University of Florida

August 2021-2022

- Creating BISON fuel performance simulations of TRISO fuel particles for implementation in prismatic High Temperature Gas Cooled Reactor design.

Student Intern, US Nuclear Regulatory Commission

Summer 2021

- Developed Probabilistic Risk Assessment models for derecho storms in the Office of Nuclear Reactor Regulation's Division of Risk Assessment (NRR/DRA/APLC).

Subcontracted Student Research, University of Florida, NASA

Spring 2021-2022

- Modeled potential fuel loss of Nuclear Thermal Propulsion System using BISON for the first proposed manned mission to Mars.

Subcontracted Student Research, University of Florida, Oak Ridge National Laboratory

Summer-Fall 2020

- Streamlined uncertainty analysis using Dakota, BISON, and the NEAMS Workbench.

Reactor Physics Group Intern, Oak Ridge National Laboratory

Fall 2019

- Programmed and developed BisonX, a user-friendly plug-in for NEAMS Workbench.

Advanced Reactor Engineering Group Intern, Oak Ridge National Laboratory

Summer 2019

- Benchmarked BISON (nuclear fuel modeling software) for nuclear metallic fuel.
- Enhanced usability in NEAMS Workbench (an experimental platform for modeling).
- Presented research at ANS Winter Meeting 2019.

Student Research, University of Florida Training Reactor

2018-2019

- Packaged and launched samples of LED lights through the core of the UF Nuclear Reactor to study effects of irradiation.

AWARDS AND RECOGNITIONS

Conference Paper Accepted, International Youth Nuclear Congress 2022

Spring 2022

Delegate, Nuclear Engineering Student Delegation

Fall 2021

Finalist, International Atomic Energy Agency (IAEA) Youth Essay Competition

Fall 2021

Selected Participant, Nuclear Engineering Student Delegation

Fall 2021

NEUP Scholarship Recipient, Nuclear Energy University Program

2021-2022

Featured in Nuclear News, American Nuclear Society

November 2019, December 2020

Innovations in Nuclear Technology Undergraduate Award, U.S. DOE

2020

1st Place Research Poster, Oak Ridge National Laboratory

Summer 2019

Ignite-Off Winner, Oak Ridge National Laboratory

Summer 2019

Thomas Edison Award, National Gallery for America's Young Inventors

Spring 2019

SKILLS AND CERTIFICATIONS

Languages: Conversational Chinese-Simplified Mandarin, Java, Python, BISON, MOOSE

Certifications: University of Florida Radiation Safety Short Course, Lab Safety Manager, Rabbit Pneumatic Rapid Transport System Operator, Focused Ion Beam Operator.