

# Kathryn A. Mummah

NUCLEAR ENGINEERING & ENGINEERING PHYSICS GRADUATE STUDENT

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## Education

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### University of Wisconsin-Madison

*Madison, WI*

GRADUATE STUDENT, NUCLEAR ENGINEERING & ENGINEERING PHYSICS

*Aug. 2017-PRESENT*

- Advisor: Professor Paul Wilson
- Fellow, Consortium for Verification Technology
- Graduate Certificate in Energy Analysis & Policy

### University of Illinois

*Urbana, IL*

B.S. NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING

*May 2017*

- Graduated with Honors
- Concentration in Power, Safety, and the Environment
- Minor in Atmospheric Sciences

## Research

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### Computational Nuclear Engineering Research Group (CNERG)

GRADUATE RESEARCH ASSISTANT

*Sept. 2017 - PRESENT*

- Designed Uranium enrichment cascades in the Cyclus fuel cycle code to model post-JCPOA cascade performance scenarios

### Advanced Reactors and Fuel Cycle Research Group

UNDERGRADUATE RESEARCH ASSISTANT

*Aug. 2016 - May 2017*

- Developed introductory experience in running the CYCLUS fuel cycle code
- Conducted literature review on previous fuel cycle transition studies

### Analysis of Reactor Transients and Stability Research Group

UNDERGRADUATE RESEARCH ASSISTANT

*Jan. 2016 - Dec. 2016*

- Assembled BISON cases benchmarking pellet cladding mechanical interactions, building on summer work at Idaho National Lab

## Experience

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### Los Alamos National Laboratory

*Los Alamos, NM*

VISITING SCIENTIST, NEN-5 SYSTEMS DESIGN & ANALYSIS

*May 2017 - Aug. 2017*

- Developed MCNP decks for nuclear thermal rockets
- Taught a primer on nuclear engineering for students without a background in nuclear science and engineering
- Designed a reactor lab module to incorporate nonproliferation concepts into undergraduate curricula

### Idaho National Laboratory

*Idaho Falls, ID*

INTERN, FUELS MODELING & SIMULATION

*May 2016 - Aug. 2016*

- Benchmarked the BISON fuel performance code with experimental data from the Halden Research Reactor, focusing on pellet clad mechanical interactions (PCMI)
- Organized the collection of donations at 16 different buildings/complexes on the INL site. Ultimately collected \$1500, 100 handwritten cards, and 150 lbs of donations to be sent to active servicemembers, veterans, and first responders through Operation Gratitude.

### University of Illinois

*Urbana, IL*

TEACHING ASSISTANT

- Lead Engineering Learning Assistant (ELA) for ENG 100 for Nuclear, Plasma, and Radiological Engineering Department. Fall 2015 & '16
- Teaching Assistant for NPRE 100: Introduction to Nuclear, Plasma, and Radiological Engineering. Fall 2014, '15, & '16
- Teaching Assistant for NPRE 101: Introduction to Energy Sources. Spring 2014 & '15
- Grader for ASTR 100: Introduction to Astronomy. Fall 2014

## Oyster Creek Generating Station

Forked River, NJ

INTERN, REACTOR ENGINEERING

Jun. 2015 - Aug. 2015

- Aligned 700 employees on Reactivity Management (RM) responsibility. For example, the weekly plant newsletter includes a "Reactivity Management System of the Week" that focuses on how that particular system could effect reactivity, or power changes in the core.
- Verified Special Nuclear Material Inventory and bundle orientations for spent fuel
- Lead a raffle fundraiser that raised \$600 to place retired Military Working Dogs in loving homes, often with retired servicemembers.

## Exelon Generation Cantera Regional Headquarters

Warrenville, IL

INTERN, SPENT FUEL & DECOMMISSIONING

Jun. 2014 - Aug. 2014

- Accumulated and analyzed data on fuel cycle burnups and fuel assembly failures.
- Created and reviewed documents to track all Special Nuclear Material

## Leadership

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### American Nuclear Society (ANS)

STUDENT DIRECTOR

Jun. - Jun. PRESENT

LOCAL SECTIONS COMMITTEE MEMBER

Jun. 2016 - PRESENT

STUDENT SECTIONS COMMITTEE MEMBER

Jun. 2016 - PRESENT

### American Nuclear Society, University of Wisconsin-Madison Student Section

MEMBER

Aug. 2017-PRESENT

ADVOCACY CO-CHAIR

Jun. 2017 - Nov. 2017

### American Nuclear Society, University of Illinois Student Section

MEMBER

Aug. 2013 - May 2017

PRESIDENT

Apr. 2015 - Apr. 2016

INTERNAL VICE PRESIDENT

Apr. 2014 - Apr. 2015

FRESHMAN PRESIDENT

Oct. 2013 - Apr. 2014

### Women in Nuclear, University of Illinois Student Section

COFOUNDER

Aug. 2015

MEMBER

Aug. 2015 - May 2017

### Engineering Ambassadors

RECRUITMENT & PUBLICITY CHAIR

Apr. 2016 - Dec. 2016

AMBASSADOR

Nov. 2015 - May 2017

### Phi Mu - Delta Beta Chapter

ACADEMIC EXCELLENCE CHAIRMAN

Dec. 2016 - May 2017

### Engineering Council

UNDERGRADUATE ADVISORY BOARD REPRESENTATIVE

Apr. 2014 - Dec. 2016

STUDENT INTRODUCTION TO ENGINEERING (SITE) RESERVATIONS CHAIR

May 2015 - May 2016

## Honors & Awards

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### SCHOLARSHIPS

- 2017-2018 **ANS Fuel Cycle and Waste Management Division Randall Scholar,**
- 2016-2017 **Roy G. Post Foundation Scholarship,**
- 2016-2017 **Dale W. and Wanda L. Weaver Engineering Scholarship,**
- 2016-2017 **Crowe Horwath Scholarship,**
- 2016-2017 **Edith and Harry Darby Leadership Scholarship,**
- 2015-2017 **DOE Nuclear Energy University Program (IUP) Scholarship Award,**
- 2015-2017 **Nuclear Regulatory Commission Scholarship,**
- 2015-2017 **American Nuclear Society Decontamination & Environmental Sciences Scholarship,**
- 2015-2017 **Catherine Pritchard Undergraduate Scholarship,**
- 2015-2016 **Exelon Energy for Education Scholarship Award,**
- 2014-2016 **National Academy for Nuclear Training Scholarship,**
- 2013-2017 **Mike Harper Leadership Scholarship,**

### AWARDS

- 2017 **University of Illinois Knights of St. Patrick,**
- 2016 **Alpha Nu Sigma,**
- 2016 **William R. Schowalter Award,**
- 2016 **American Nuclear Society Commendation for Service and Leadership,**
- 2014 **American Nuclear Society Most Committed Member,**
- 2013 **University of Illinois James Scholar,**