

# Kathryn A. Mummah

UNDERGRADUATE STUDENT

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## Education

### University of Illinois

Urbana, IL

B.S. NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING

May 2017

- GPA: 3.60 / 4.00
- Concentration in Power, Safety, and the Environment
- Minor in Atmospheric Sciences

## Research

### Advanced Reactors and Fuel Cycle Research Group

UNDERGRADUATE RESEARCH ASSISTANT

Aug. 2016 - PRESENT

- 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

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

### Experimental Thermal Hydraulics Research Group

UNDERGRADUATE RESEARCH ASSISTANT

Aug. 2015 - Dec. 2015

- Developed a Computer-Aided-Design (CAD) 3D model of a section of lab space with over 30 pipes and supports for use in developing laboratory experiments

## Experience

### Idaho National Laboratory

Idaho Falls, ID

FUELS MODELING & SIMULATION INTERN

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 for ENG 100, TA for NPRE 100, 101
- 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

REACTOR ENGINEERING INTERN

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

SPENT FUEL & DECOMMISSIONING INTERN

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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### Engineering Ambassadors

RECRUITMENT & PUBLICITY CHAIR

*Apr. 2016 - Dec. 2016*

AMBASSADOR

*Nov. 2015 - PRESENT*

### American Nuclear Society

LOCAL SECTIONS COMMITTEE, STUDENT SECTIONS COMMITTEE

*Jun. 2016 - PRESENT*

### American Nuclear Society Student Section

MEMBER

*Aug. 2013 - PRESENT*

PRESIDENT

*Apr. 2015 - Apr. 2016*

INTERNAL VICE PRESIDENT

*Apr. 2014 - Apr. 2015*

FRESHMAN PRESIDENT

*Oct. 2013 - Apr. 2014*

### Women in Nuclear Student Section

FOUNDER

*Aug. 2015*

MEMBER

*Aug. 2015 - PRESENT*

### 314 Action - University of Illinois section

FOUNDER

*Feb. 2017*

### Phi Mu - Delta Beta Chapter

ACADEMIC EXCELLENCE CHAIRMAN

*Dec. 2016 - May 2017*

### Engineering Council

UNDERGRADUATE ADVISORY BOARD REPRESENTATIVE

*Apr. 2014 - PRESENT*

STUDENT INTRODUCTION TO ENGINEERING (SITE) RESERVATIONS CHAIR

*May 2015 - May 2016*

### Student Chapter of the American Meteorological Society

SECRETARY

*Apr. 2015 - Apr. 2016*

## Honors & Awards

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### SCHOLARSHIPS

- 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 Division 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 **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,**

## Presentations

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### **Investigating the Effects of Fuel Pellet Geometry on Pellet Cladding Mechanical Interaction (PCMI) using BISON**

*Las Vegas, NV*

2016 AMERICAN NUCLEAR SOCIETY WINTER MEETING - STUDENT POSTER SESSION

*Nov. 2016*

K. MUMMAH, R. WILLIAMSON

### **Public Image in Spent Fuel Disposal: Lessons Learned from Sweden's SKB**

*Madison, WI*

2016 AMERICAN NUCLEAR SOCIETY STUDENT CONFERENCE

*Apr. 2016*

K. MUMMAH, C. KUPRIANCZYK

- Winner of "Public Image" technical track

### **Reactivity Management: More Than Just Reactor Engineers**

*Washington, DC*

2015 AMERICAN NUCLEAR SOCIETY WINTER MEETING - STUDENT POSTER SESSION

*Nov. 2016*

K. MUMMAH

## Professional Organizations

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2014 - 2017 **Student Member**, American Nuclear Society

2016 - 2017 **Student Member**, American Society of Mechanical Engineers

2015 - 2017 **Student Member**, Society of Women Engineers

2015 - 2016 **Student Member**, American Meteorological Society