

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

Relevant Skills

- Matlab
- Basic Python skills
- Microsoft Office (Word, Excel, PowerPoint)
- MOOSE Framework
- Github
- LaTeX

Leadership

Engineering Ambassadors

RECRUITMENT & PUBLICITY CHAIR

Apr. 2016 - PRESENT

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

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

Honors & Awards

SCHOLARSHIPS

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| 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

- 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

Current Status of Predictive Transition Capability in Fuel Cycle Simulation

Seoul, Korea

GLOBAL 2017: INTERNATIONAL FUEL CYCLE CONFERENCE

Sept. 2017

K. HUFF, J. BAE, R. FLANAGAN, K. MUMMAH, A. SCOPATZ

- Abstract Submitted

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

- 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