

Kathryn A. Mummah

PHD STUDENT IN NUCLEAR ENGINEERING & ENGINEERING PHYSICS

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Education

University of Wisconsin-Madison

Madison, WI

GRADUATE RESEARCH ASSISTANT, NUCLEAR ENGINEERING & ENGINEERING PHYSICS

Aug. 2017-PRESENT

M.S. NUCLEAR ENGINEERING AND ENGINEERING PHYSICS

May 2020

- Advisor: Professor Paul Wilson
- Fellow, Nuclear Nonproliferation and International Safeguards (NNIS) Graduate Fellowship Program
- Graduate Associate, Consortium for Monitoring, Technology, and Verification (MTV)
- PhD Minor in Science Communication
- Graduate Certificate in Energy Analysis & Policy

University of Illinois at Urbana-Champaign

Urbana, IL

B.S. NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING

May 2017

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

Research

Computational Nuclear Engineering Research Group (CNERG)

Madison, WI

GRADUATE RESEARCH ASSISTANT

Sept. 2017 - PRESENT

- Designing software to model the life-cycle of uranium for nuclear nonproliferation applications

Los Alamos National Laboratory

Los Alamos, NM

GRADUATE RESEARCH ASSISTANT, NEN-2 ADVANCED NUCLEAR TECHNOLOGY

May 2018 - Aug. 2018

SUMMER RESEARCH FELLOW, GLENN T. SEABORG INSTITUTE

- Identified approaches to combine uranium life-cycle modeling and existing methodology for analyzing nuclear diversion pathways.
- Expanded nuclear engineering primer series to 2.5 hours of material including detailed background on nuclear power accidents

VISITING STUDENT, NEN-5 SYSTEMS DESIGN & ANALYSIS

May 2017 - Aug. 2017

- Developed models of nuclear thermal reactors using the code MCNP.
- Taught a primer on nuclear engineering for students without a background in nuclear science and engineering
- Created 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 a nuclear fuel performance code with experimental data from the Halden Research Reactor
- 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.

Work Experience

University of Wisconsin-Madison Engineering Physics Department

Madison, WI

GRADER

- NE405: Nuclear Reactor Theory, Spring 2018

University of Illinois

Urbana, IL

TEACHING ASSISTANT

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

Oyster Creek Generating Station

INTERN, REACTOR ENGINEERING

Forked River, NJ

Jun. 2015 - Aug. 2015

- Aligned 700 employees on Reactivity Management (RM) responsibility.
- 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

INTERN, SPENT FUEL & DECOMMISSIONING

Warrenville, IL

Jun. 2014 - Aug. 2014

- Accumulated and analyzed data on fuel cycle burnups and fuel assembly failures.
- Tracked and reviewed documents on Special Nuclear Material

Conference Presentations & Posters

Acquisition Pathway Analysis using Fuel Cycle Simulators

2019 INMM ANNUAL MEETING

K. Mummah, R. Bahrn, K. Miller, P. P.H. Wilson

Palm Desert, CA

July 2019

Modeling Potential JCPOA Diversion Scenarios with Cyclus

2018 AMERICAN NUCLEAR SOCIETY ANNUAL MEETING

B. Mougnot, K. Mummah, P. P.H. Wilson

Philadelphia, PA

June 2018

Off-normal operation in gas centrifuge enrichment cascades

2018 AMERICAN NUCLEAR SOCIETY STUDENT CONFERENCE - POSTER SESSION

K. Mummah, B. Mougnot, P. P.H. Wilson

Gainesville, FL

Apr. 2018

NuWWIS: An Interim Storage Solution for Spent Fuel

2017 AMERICAN NUCLEAR SOCIETY STUDENT CONFERENCE

K. Mummah, J. Bae, D. OGrady, A. Lopez

Pittsburgh, PA

Apr. 2017

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

2016 AMERICAN NUCLEAR SOCIETY WINTER MEETING - STUDENT POSTER SESSION

K. Mummah, R. Williamson

Las Vegas, NV

Nov. 2016

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

2016 AMERICAN NUCLEAR SOCIETY STUDENT CONFERENCE

K. Mummah, C. Kuprianczyk

- Winner of "Public Image" technical track

Madison, WI

Apr. 2016

Reactivity Management: More Than Just Reactor Engineers

2015 AMERICAN NUCLEAR SOCIETY WINTER MEETING - STUDENT POSTER SESSION

K. Mummah

Washington, DC

Nov. 2016

Service

PROFESSIONAL SERVICE

American Nuclear Society (ANS)

VICE CHAIR, STUDENT SECTIONS COMMITTEE

June 2019 - PRESENT

MEMBER, STUDENT SECTIONS COMMITTEE

June 2016 - PRESENT

STUDENT DIRECTOR, BOARD OF DIRECTORS

June 2017 - June 2019

EXECUTIVE COMMITTEE, YOUNG MEMBERS GROUP

June 2019 - PRESENT

EXECUTIVE COMMITTEE, NUCLEAR NONPROLIFERATION POLICY DIVISION

June 2018 - PRESENT

MEMBER, DIVERSITY AND INCLUSION COMMITTEE

July 2018 - PRESENT

MEMBER, LOCAL SECTIONS COMMITTEE

June 2016 - June 2019

American Nuclear Society, University of Wisconsin-Madison Student Section

MEMBER

Aug. 2017-PRESENT

GOVERNOR

May 2018 - Dec 2018

ADVOCACY CO-CHAIR

Jun. 2017 - Nov. 2017

Catalysts for Science Policy

MEMBER

June 2019 - PRESENT

Wisconsin Baja Racing

MEMBER

Aug. 2018 - PRESENT

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, University of Illinois

RECRUITMENT & PUBLICITY CHAIR

Apr. 2016 - Dec. 2016

AMBASSADOR

Nov. 2015 - May 2017

Phi Mu - Delta Beta Chapter

ACADEMIC EXCELLENCE CHAIRMAN

Dec. 2016 - May 2017

MEMBER

Sept. 2016 - May 2017

Engineering Council, University of Illinois

STUDENT INTRODUCTION TO ENGINEERING (SITE) RESERVATIONS CHAIR

May 2015 - May 2016

Student Chapter of the American Meteorological Society

SECRETARY

Apr. 2015 - Apr. 2016

MEMBER

Jan. 2015 - May 2017

Illinois Space Society

RASC-AL TECHNICAL TEAM MEMBER

Aug. 2014 - Dec. 2014

REPRESENTATIVE TO STUDENTS FOR THE EXPLORATION AND DEVELOPMENT OF SPACE (SEDS)

Sept. 2013 - Sept. 2014

DEPARTMENT SERVICE

UW-Madison Dept of Engineering Physics

CHAIR, STUDENT ADVISORY COMMITTEE

Apr. 2019-PRESENT

DEPARTMENT REPRESENTATIVE TO THE COLLEGE OF ENGINEERING GRADUATE ADVISORY COMMITTEE

Aug. 2018 - PRESENT

University of Illinois Dept of Nuclear, Plasma, and Radiological Engineering

UNDERGRADUATE ADVISORY BOARD REPRESENTATIVE

Apr. 2014 - Dec. 2016

OTHER SERVICE

Fetch WI Rescue

[Madison, WI](#)

DOG FOSTER PARENT

2019-PRESENT

Rethinking Nuclear

[Madison, WI](#)

SCIENCE ADVISOR

2018-PRESENT

Honors & Awards

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 UIUC Most Committed Member**
- 2013 **University of Illinois James Scholar**

SCHOLARSHIPS AND FELLOWSHIPS

- 2019-20 Graduate Fellow, **Nuclear Nonproliferation International Safeguards Program (NNIS)**
- 2018 Summer Research Fellow, **Glenn T. Seaborg Institute**
- 2018-19 Graduate Fellow, **Consortium for Verification Technology**
- 2018-19 **ANS Fuel Cycle and Waste Management Division Randall Scholar**
- 2017-18 Graduate Fellow, **Consortium for Verification Technology**
- 2017-18 **ANS Fuel Cycle and Waste Management Division Randall Scholar**
- 2013-17 **Mike Harper Leadership Scholarship**
- 2016-17 **Roy G. Post Foundation Scholarship**
- 2016-27 **Dale W. and Wanda L. Weaver Engineering Scholarship**
- 2016-17 **Crowe Horwath Scholarship**
- 2016-17 **Edith and Harry Darby Leadership Scholarship**
- 2016-17 **DOE Nuclear Energy University Program (IUP) Scholarship Award**
- 2016-17 **Nuclear Regulatory Commission Scholarship**
- 2016-17 **American Nuclear Society Decommissioning & Environmental Sciences Scholarship**
- 2016-17 **Catherine Pritchard Undergraduate Scholarship**
- 2016-17 **Mike Harper Leadership Scholarship**
- 2015-16 **DOE Nuclear Energy University Program (IUP) Scholarship Award**
- 2015-16 **Nuclear Regulatory Commission Scholarship**
- 2015-16 **American Nuclear Society Decommissioning & Environmental Sciences Scholarship**
- 2015-16 **Catherine Pritchard Undergraduate Scholarship**
- 2015-16 **Exelon Energy for Education Scholarship Award**
- 2015-16 **National Academy for Nuclear Training Scholarship**
- 2015-16 **Mike Harper Leadership Scholarship**
- 2014-15 **ANS Incoming Sophomore Scholarships**
- 2014-15 **National Academy for Nuclear Training Scholarship**
- 2014-15 **Mike Harper Leadership Scholarship**
- 2013-14 **Mike Harper Leadership Scholarship**

Professional Organizations

- Since 2013 Student Member, **American Nuclear Society**
- Since 2015 Member, **Women in Nuclear**
- Since 2015 Student Member, **Society of Women Engineers**
- Since 2017 Member, **Earth Science Women's Network**
- Since 2018 Student Member, **Institute of Nuclear Materials Management**
- Since 2019 Student Member, **Society of Automotive Engineers**
- Since 2019 Member, **National Science Policy Network**