Greg Westphal

CONTACT INFORMATION

Graduate Research Assistant
University of Illinois, Urbana-Champaign
Nuclear, Plasma, and Radiological Engineering

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MS

The goal of this work is to incorporate non-proliferation safeguards by design into fuel cycle facilities. Diversion detection methods are applied to a pyroprocessing facility within Cyclus to inform on key measurement points. This is funded through the Department of Energy Consortia for Non-proliferation Enabling Capabilities.

University of Illinois at Urbana-Champaign, NUCLEAR ENGINEERING **Aug 2019**

- Thesis: Diversion Detection of Pyroprocessing with Cyclus
- Advisor: Professor Kathryn D. Huff

BA

Missouri University of Science and Technology, NUCLEAR ENGINEERING **May 2017**

RESEARCH EXPERIENCE

University of Illinois at Urbana-Champaign, Urbana, IL
Graduate Research Assistant, Advanced Reactors and Fuel Cycles Group **Nov 2017 – Present**

- Simulated non-proliferation scenarios with Cyclus.
- Modeled a pyroprocessing within Cyclus using C++.
- Analyzed results with diversion detection algorithms and python.

Washington University - St. Louis, St. Louis, MO
Data Analyst, Radiology Department **May 2016 – Aug 2016**

- Conducted proton dosimetry experiments.
- Gained experience in a medical research environment.
- Utilized Matlab for image processing.

RESEARCH INTERESTS

Advanced reprocessing and fuel cycles, non-proliferation, nuclear fuel cycle analysis, scientific computation.

HONORS AND AWARDS

Finalist Poster Presentation, UPR 2019 **June 2019**
Graduated MST Summa Cum Laude **May 2017**

ACTIVITIES

Women in Nuclear – Member **January 2018 – present**
American Nuclear Society – Member **August 2017 – present**
Nuclear Science Design Team – Vacuum Group Lead **Jan 2016 – May 2017**
Kappa Mu Epsilon – Member **Aug 2015 – May 2017**

REFEREED CONFERENCE ABSTRACTS

[1] **Westphal, G.**, Huff, K. "Diversion Detection within Cyclus Archetypes", **Technical Workshop on Fuel Cycle Simulation.** Champaign, IL, June 2019.

[2] **Westphal, G.**, Huff, K. "Diversion Detection in Cyclus", **University Program Review.** Raleigh, NC, June 2019.

[3] **Westphal, G.**, Huff, K. "Modelling Pyroprocessing in Cyclus", **Consortia for Non-proliferation Enabling Capabilities Review**, Raleigh, NC, February 2019.

[4] **Westphal, G.**, Huff, K. "PyRe: A Cyclus Pyroprocessing Facility Archetype", **Transactions of the American Nuclear Society Winter Conference.** Orlando, FL, November 2018.

[5] **Westphal, G.**, Huff, K. "Signatures and Observables of the Nuclear Fuel Cycle", **University Program Review.** Ann Arbor, MI, June 2018.

[6] **Westphal, G.**, Huff, K. "Signatures and Observables of the Nuclear Fuel Cycle", **Consortia for Non-proliferation Enabling Capabilities Review**, Raleigh, NC, January 2018.

Teaching Experience

University of Illinois at Urbana-Champaign
Dept. of Nuclear, Plasma, and Radiological Engineering
NPRE 451, Radiation Lab **Fall 2017**

Training

SEE LANL Nuclear Safeguards Training Course
Los Alamos National Laboratory
Hands on non-destructive assay course and IAEA inspection **January 2019**

Skills

Programming bash, C++, Python, XML, SQL, nose, git, LaTeX, MatLab