Jordan Stomps

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Education

University of Wisconsin – Madison; Madison, WI

Nuclear Engineering and Engineering Physics, Ph.D. | ETI Graduate Fellow | Advisor: Dr. Paul Wilson

> **Research Interests:** Fuel Cycle Modeling, Nuclear Nonproliferation, Machine Learning

> **Organizations:** American Nuclear Society, Consortium for Enabling Technologies & Innovation

Nuclear Engineering and Engineering Physics, M.S. | GPA: 3.63 | Graduation: December 2021

> **Relevant Coursework:** Artificial Intelligence, Energy Analysis and Policy, Nuclear Reactor Theory

Michigan State University: Honors College; East Lansing, MI

Physics, B.S. | Minors: Computational Math & Economics | GPA: 3.90 | Graduation: May 2019

> **Relevant Coursework:** Nuclear Physics Survey, Matrix Algebra, Computational Modelling

> **Organizations:** ASMSU, Nuclear Policy Working Group, Society of Physics Students

Work Experience

Nuclear Nonproliferation Intern; Oak Ridge National Laboratory, TN   **May 2022 – present**

- ORNL GO! program intern supporting nuclear nonproliferation research efforts
- Continued data analysis projects and thesis collaboration toward nuclear security objectives

Graduate Research Assistant; University of Wisconsin – Madison, WI   **August 2019 – present**

- Contributed to software development of Cyclus, a fuel cycle simulator, for nuclear security
- ETI dissertation research supporting Department of Energy nuclear nonproliferation efforts
- Researched machine learning methods for special nuclear material transfer identification

Graduate Teaching Assistant; University of Wisconsin – Madison, WI   **September 2020 – May 2021**

- Led laboratory class time by supervising detector use and guiding student learning
- Graded laboratory reports and practice problem sets for primarily undergraduate students
- Supported NE 427, a class teaching applied nuclear physics and radiation detection

Undergraduate Research Assistant; NSCL, East Lansing, MI   **August 2017 – July 2019**

- Assisted with operation and analysis for a gas-filled detector of beta delayed protons
- Utilized existing software to develop an experimental specific program for data acquisition
- Experienced coding in a C++ framework, Tcl/TK scripting language, and ROOT on a Linux OS

Undergraduate Research Assistant; University of Glasgow, UK   **June 2018 – July 2018**

- Completed an independent research project with a supervisor for academic credit
- Applied criteria to existing particle physics jet algorithms with ATLAS collaborators
- Conducted analysis using Python, C++, and ROOT on flavor-tagged jet data from CERN

Data Analytics Intern; Quicken Loans, Detroit, MI   **May 2017 – May 2018**

- Developed a calculator for outcomes of liquidating assets, saving $10 million on portfolio
- Contributed to policy proposals provided to HUD and the Treasury Department
- Created models and algorithms to complete analysis that helped in product development
- Led project development and presented recommendations to senior executives

Undergraduate Research Assistant; MSU, East Lansing, MI   **August 2016 - March 2017**

- Worked on a Life Cycle Assessment that studied the viability of Gen IV Nuclear Reactors
- Simulated costs/benefits by analyzing data collected on material factors

Leadership Experience

President for the Society of Physics Students; MSU Physics Department   **April 2017 – April 2018**

- Organized meetings and fostered connections between students and faculty

Secretary for the Society of Physics Students; MSU Physics Department   **April 2016 - April 2017**

Rep. for the College of Natural Science; Associated Students of MSU   **April 2016 - March 2017**

- Guided the operations of ASMSU as Vice-Chairman of the Policy Committee
- Represented students as a voting member on MSU's Academic Governance

President of Freshman Class Council; Associated Students of MSU   **September 2015 – April 2016**

President of Sophomore Class Council; Associated Students of MSU   **September 2016 – April 2017**

Presentations

MSU SPS Monthly Meeting; "Nuclear Engineering and Nonproliferation"   **January 2022**

University Program Review; National Nuclear Security Administration   **August 2021**

ETI Annual Workshop; Poster Presentation   **October 2020**

ETI Virtual Summer Meeting; Presentation Video   **July 2020**

MSU UURAF; Oral Presentation   **April 2019**

MSU UURAF; Poster Presentation   **April 2018**

Publications

T. Budner et al., "Constraining the ^{30}P$(p,\gamma)^{31}$S Reaction Rate in ONe Novae via the Weak, Low-Energy, β-Delayed Proton Decay of ^{31}Cl," *Phys. Rev. Lett.*, vol. 128, no. 18, p. 182701, May 2022. 10.1103/PhysRevLett.128.182701

L. J. Sun *et al.*, "^{25}Si β$^+$-decay spectroscopy," *Phys. Rev. C*, vol. 103, no. 1, p. 014322, Jan. 2021. 10.1103/PhysRevC.103.014322

M. Friedman *et al.*, "Low-energy ^{23}Al β-delayed proton decay and ^{22}Na destruction in novae," *Phys. Rev. C*, vol. 101, no. 5, p. 052802, May 2020. 10.1103/PhysRevC.101.052802

M. Friedman *et al.*, "GADGET: A Gaseous Detector with Germanium Tagging," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 940, pp. 93–102, Oct. 2019. 10.1016/j.nima.2019.05.100

Awards

Physical Science Oral Presentation 1st Place; UURAF Michigan State University	**April 2019**
Lawrence W. Hantel Endowed Fellowship Award; MSU Dept. of Physics & Astronomy	**October 2018**
Undergraduate Research Support Scholarship; College of Natural Science	**October 2018**
CEU Travel Funding; Division of Nuclear Physics (American Physical Society)	**October 2018**
Academic Excellence Award; Office of Study Abroad	**April 2018**
Study Abroad Scholarship; College of Natural Science	**April 2018**

Conferences and Workshops

ANS Virtual Annual Meeting; American Nuclear Society	**June 2021**
Princeton Virtual School on Science and Global Security; Princeton University	**October 2020**
ETI Annual Workshop; Consortium for Enabling Technology & Innovation	**October 2020**
Computing in Engineering Forum; University of Wisconsin – Madison	**September 2020**
ETI Virtual Summer Meeting; Consortium for Enabling Technology & Innovation	**July 2020**
ANS Virtual Annual Meeting; American Nuclear Society	**June 2020**
ETI Annual Workshop; Georgia Institute of Technology, Georgia	**November 2019**
MTV Workshop – Fuel Cycle Facility Modeling; University of Wisconsin – Madison	**October 2019**
University Undergraduate Arts & Research Forum; Michigan State University	**April 2018**
Conference Experience for Undergraduates; Division of Nuclear Physics (APS), Hawaii	**October 2018**
University Undergraduate Arts & Research Forum; Michigan State University	**April 2018**

Relevant Skills

- Expertise in design and implementation for semi-supervised machine learning
- Advanced computing techniques including Unix, Git, C++, Bash Scripting, and Docker
- Python programming including Scipy, NumPy, MatPlotLib, Pandas, and H5PY
- Statistical skills including agent-based modelling, linear regression, and Monte Carlo
- Lab procedures involving optics, vacuums, electronics, nuclear detectors, and lab reports
- Excel skills including Pivot Tables, VLOOKUPs, formula logic, data validation, and VBA

Training

Novel Instrumentation and Sensors; Consortium for Enabling Technology & Innovation   **July 2021**

Safeguards Summer School; Pacific Northwest National Laboratory   **June 2021**

Graduate Assistants' Equity Workshop; University of Wisconsin – Madison   **October 2020**

CNERG Annual Hackathon – Conda-forge; University of Wisconsin – Madison   **January 2020**

Responsible Conduct of Research; University of Wisconsin – Madison   **September 2019**

Plagiarism Workshop; MSU Writing Center (PHY 451)   **September 2018**

Chemical Hygiene, Laboratory Safety, & Hazardous Waste; MSU EHS   **August 2018**

Radiation Safety Training; NSCL   **August 2018**

Nuclear Science Laboratory Space Training; NSCL   **August 2018**

Volunteer Experience

Canine Caretaker; Young-Williams Animal Center   **July 2022-present**

Physics & Astronomy Day; Impression 5 Science Center   **February 2018**