

Nathan Ryan

708.567.0002 • nsryan2@illinois.edu

Education

University of Illinois Urbana-Champaign — *Masters of Science in Nuclear Engineering* 2024

University of Illinois at Urbana-Champaign — *Bachelor of Science in Engineering Physics* 2022

Research Interests

fuel cycle analysis; decommissioning modeling; energy system analysis; software development for scientific analysis; multiphysics simulations; nontraditional applications of nuclear science; open-source science and computing; data accessibility

Research Experience

University of Illinois, Urbana Champaign Spring 2020 – present

- *Undergraduate Research Assistant, Advanced Reactors and Fuel Cycles Group*: My work involved everything from technical editing to novel research on compound echo state networks and hydrogen capacity in Illinois. [Python, SQL, LaTeX, Markdown]
- *Graduate Research Assistant, Advanced Reactors and Fuel Cycles Group*: My work involves developing energy system models of the state of Illinois and developing the CYCLUS code for fuel cycle analysis. [C++, Python, SQL]

Publications

Peer-Reviewed Journals

- Amanda M. Bachmann, Roberto Fairhurst-Agosta, Zoe Richter, **Nathan Ryan**, Madicken Munk, “Enrichment dynamics for advanced reactor HALEU support”, Nuclear Science and Engineering (Accepted)
- Samuel G. Dotson, **Nathan S. Ryan**, Kathryn D. Huff Ph.D, “Evaluation of Weather Parameters for Renewable Energy Forecasting with Echo State Networks” (anticipated submission 2022)

Technical Reports

- Prof. Kathryn D. Huff, Dr. Madicken Munk, et al., “Economic and Carbon Impacts of Potential Illinois Nuclear Plant Closures”, Department of Nuclear, Plasma, and Radiological Engineering, UIUC (2021)

Invited Talks

Timley Park High School, Introduction to Nuclear Science & Careers, Seminar, January 2020

TEDxYouth Evolutionary Anthropology and Involving More Youth in Science, February 15, 2019

Scholarships and Awards

- UIUC Dean's List 2020
- 2020 Excellence in Physics Scholarship

Service *(in chronological order)*

- ANS Student Conference Finance Subcommittee Chair, 2022-2023
- ANS Winter Meeting Student Program Chair, 2022
- 2023 Young Professional's Congress Organizer, 2022-2023
- NPRE Graduate Student Advisory Committee Member, 2022-present
- Public Relations Officer of the UIUC student American Nuclear Society chapter, 2020-2022
- Engineering Outreach Bureau Coordinator UIUC 2020-2022
- Media Coordinator of the ANS student conference planning committee, 2019-2022

Skills

Software Packages

PyTest
Sphinx
TEMOA
CYCLUS

Languages

Python
Markdown
Bash
SQL

Skills

git/github
make/CMake
LaTeX/BibTeX