Bryce A. Frentz

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LinkedIn | GitHub | Google Scholar

Summary of qualifications

- Talent for distilling and clearly communicating complex information to a variety of audiences through writing and public speaking
- Dynamic problem solver with experience tackling unexpected problems, managing multiple projects, and collaborating with diverse colleagues
- Broad experiences in gathering and analyzing scientific data

Education

University of Notre Dame — Notre Dame, Indiana

Ph.D., Nuclear Physics — May 2020 (Expected)
M.S., Physics — January 2018
GPA 3.93/4.00

Concordia College — Moorhead, Minnesota

Honors B.A., Physics — May 2014
B.A., Mathematics — May 2014
Summa cum laude
GPA 3.92/4.00

Software competencies

Programming: C++ (intermediate), Python (intermediate), HTML (basic), SQLite (basic)
Statistical Analysis: R (basic), Pandas (basic), and Mathematica (intermediate)
Operating Systems: Mac OSX (advanced), Windows (advanced), and Unix/Linux (basic)
Other: LaTeX(advanced), Microsoft Office Suite (advanced)

Professional Experience

University of Notre Dame — Notre Dame, Indiana
Graduate Research Assistant — August 2014 – present

Research

· Performed nuclear cross-section and lifetime measurements to provide a better understanding of astrophysical processes and wrote the accompanying analysis programs in Python and C++
· Developed Monte Carlo simulations in C++ to help design novel experiments at the University of Notre Dame and the Sanford Underground Research Facility
· Participated in over 30 unique experiments, utilizing four different particle accelerators and data acquisition systems
· Translated scientific research contributions into 14 publications (10 accepted, 4 submitted, 2 in preparation) and 8 professional presentations at regional, national, and international conferences
· Built the electronic control system for the CASPAR project at the Sanford Underground Research Facility, the first underground accelerator laboratory in the USA, and led its inaugural experimental campaign

Managerial

· Led accelerator training for both undergraduate and graduate students, providing classroom lectures and hands-on training

· Provided direction for research teams of students and staff by establishing efficient work strategies, delegating tasks, and adapting to adversities
· Teaching assistant for 9 unique courses, where duties included lecturing, hosting office hours, organizing tutorial help sessions, and grading
· Private physics tutor for students in pre-professional and pre-engineering programs where I provided supplemental lectures and homework support to over 10 students

Professional Leadership and Service

· Vetted more than 100 presentation applications and organized on-site logistics for the five day 2018 JINA-CEE Frontiers Conference
· Coordinated both oral and poster presentations for approximately 40 graduate students and faculty for the 2018 NSF Budget Review of the Notre Dame Nuclear Science Laboratory
· Led and participated in over 30 volunteer outreach activities for students (ages 6-22 in groups ranging in size from 10-1,000), acting as co-chair of graduate student outreach in the physics department for the 2015-2016 academic year
· Nuclear Science merit badge counselor for Boy Scouts of America, Lasalle Council

Honors and Awards

Larry O. Lamm Memorial Award in Nuclear Physics, Recipient	2020
Notre Dame Graduate School Professional Development Award, Recipient	2018
Notre Dame Graduate Student Union Conference Presentation Grant, Recipient	2018
Fulbright Student Program, Federal-Finalist	2016
Kaneb Center for Teaching and Learning, Outstanding Graduate Student Teaching Award	2016
Sigma Pi Sigma National Physics Honor Society	2014
Midwest Undergraduate Data Analytics Competition, Champion	2014
National Science Foundation, STEM Talent Expansion Program Fellow	2011
Boy Scouts of America, Eagle Scout	2009

Interests

Professional
Data science, predictive modeling, artificial intelligence, machine learning, probability, forecasting, nuclear disarmament, climate science, nuclear astrophysics

Personal
Player-coach for intramural soccer, dodgeball, and curling teams, sports enthusiast (particularly soccer), reading, running, biking, hiking, cooking, and music