

Ian Q. Snider

Berkeley, CA 94620 · (660) 341-6806 · iqsnider@berkeley.edu · iansnider.com

EDUCATION

University of California, Berkeley, Berkeley, CA *August 2025 - present*
Ph.D. Nuclear Engineering --/4.00

Washington University in St. Louis, St. Louis, MO *May 2025*
B.S. Mechanical Engineering 4.00/4.00

Truman State University, Kirksville, MO *Conferred: Dec 2024*
B.A. Physics, Mathematics Minor 3.89/4.00

EXPERIENCE

Lawrence Livermore National Laboratory - Graduate Intern, Livermore, CA *June 2025 - present*

Faculty mentor: Jesse Norris - *Nuclear Criticality Safety Division*

- Developed CRISP (CRITICAL Simulation Pipeline) for parallelizing jobs from a radiation transport Monte Carlo code: COG
- Test driven Python development included Poetry, CI/CD pipeline, sqlite scalable materials database, MPI optimization, CLI development, feature branching, and Sphinx documentation
- Utilized world-class LLNL HPC clusters Dane and Ruby with Slurm sbatch/srun scripts
- CRISP successfully automated the materials compiling and k_{eff} benchmarking of ~ 3420 ICSBEP critical reactors

Brookhaven National Laboratory - Nuclear Science Intern, Upton, NY *2022 - 2024*

Faculty mentor: Gustavo Nobre - *National Nuclear Data Center (NNDC)*

- Developed BRR (Bayesian Resonance Reclassifier) for heavy-nuclei resonance reclassification on NNDC clusters
- Applied python machine learning and Random Matrix Theory to develop synthetic training sets and classify resonance spin assignments for capture cross-sections
- Used the neutron transport code OpenMC to perform perturbative sensitivity analyses of the thermal $1/v$ neutron capture cross-sections for critical reactors

Truman State University - Student Astronomy Researcher, Kirksville, MO *2021 - 2022*

Faculty mentor: Vayujeet Gokhale - Department of Physics

- Calculated trajectories of Starlink satellites to optimize telescope viewing plans
- Researched long-exposure luminosity data corruption due to Starlink satellite interference
- Developed a GUI for Truman astronomy students
- Wrote and submitted a proposal for the TruScholars grant

SKILLS

- **Coding Languages:** Python, Go, C, C++, Bash, Lua, SQL, MATLAB, Mathematica, Octave, LaTeX, Typst, Vimscript
- **Software:** Simulink, SolidWorks, OpenMC, COG (transport code), NJOY2016, Pytorch, Scikit-learn, Slurm, Git, Linux, Arduino, Microsoft Office

- **Technical/Laboratory:** Technical Writing, Machining, Analog & Digital Electronics, Robotics, Embedded Electronics, Computer Clusters
- **Advanced physics/engineering coursework/lab experience:** Electricity & Magnetism, Electronics, Classical Mechanics, Quantum Physics, Mathematical Physics, Vibrations, Nuclear Physics, Thermodynamics, Fluid Mechanics, Solid Mechanics, Heat Transfer, Acoustics, Materials Science, Thermal Systems, Aerospace Propulsion, Turbojets, Ramjets, Autonomous Aerial Vehicle Control, State Estimation, and Kalman Filtering
- **Advanced mathematics coursework:** Linear Algebra, Ordinary Differential Equations, Computing Structures, Control Systems, Machine Learning, and Optimizations

ACTIVITIES

MARINER Robotics Project - Project Lead 2024 - 2025

- Collaborated with other students to develop an advanced autonomous underwater vehicle (AUV)
- Researched and developed hydrodynamic dive control
- Built a chassis and buoyancy engine
- Researched translational acoustic-RF communications (TARF) for data transmission at the water-to-air interface

WashU Climbing - Member 2024 - 2025

- Indoor & outdoor bouldering, top roping, and lead climbing

MATE ROV Robotics Competition - Mechanical Lead 2023 - 2025

- Mechanical team lead on the MATE ROV underwater robotics team
- Designed and built a vertical profiling buoyancy engine
- Designed grabbers and manipulators for the main ROV chassis

Society of Physics Students - Demo Chair 2020 - 2023

- Organize, develop, and perform physics demos
- Inform/encourage students to engage in research activities
- Weekly commitment to volunteer physics tutoring
- Wrote and proctored exams for 2022 & 2023 Science Olympiads (“Crave the Wave” and “Remote Sensing”)

Competitive Math December 2022

- Participated in the 2022 Putnam competition

Dark Sky TSU 2021 - 2022

- Group at Truman State University dedicated to light pollution education and outreach

HONORS

Kenneth L. Jerina Prize for Outstanding Dual-Degree in Mechanical Engineering April 2025

- Honored for academic achievements and engineering community contributions.

Conference Experience for Undergraduates 2023 September 2023

- Competitive research abstract award
- Invitation to present a research poster at the APS DNP Fall 2023 conference on The Big Island, HI

Conference Experience for Undergraduates 2022 August 2022

- Competitive research abstract award

- Invitation to the poster presentation at the APS DNP Fall 2022 meeting in New Orleans, LA

Sigma Pi Sigma Honor Society

May 2022

- Recognized for service and academic scholarship in physics

TECHNICAL REPORTS AND ABSTRACTS

- [1] G. Nobre *et al.*, “Annual Report on NCSP Technical Support task in BNL during FY24,” 2024.
- [2] I. Snider, G. Nobre, and D. Brown, “Resonance Capture Widths for the Bayesian Resonance Reclassifier,” in *APS Meeting Abstracts*, 2023, pp. DB3–74.
- [3] I. Snider, G. Nobre, D. Brown, and W. Fritsch, “Accuracy Correlation in Neutron Resonance Reclassification,” *Bulletin of the American Physical Society*, vol. 67, 2022.

CONFERENCE PRESENTATIONS

- Lawrence Livermore National Laboratory Student Research Conference. Lawrence Livermore National Lab B511, Livermore, CA, August 7th, 2025.
- Brookhaven National Laboratory Student Research Conference. Brookhaven National Lab Bldg. 488, Upton, NY, August 9th, 2024.
- American Physical Society - Division of Nuclear Physics and Japan Physical Society joint fall meeting. Hilton Waikoloa Village, The Big Island, HI, Nov 27-Dec 1, 2023.
- Brookhaven National Laboratory Student Research Conference. Brookhaven National Lab Bldg. 488, Upton, NY, August 10th, 2023.
- Truman State University Student Research Conference. Truman State University, Kirksville, MO, April 21st, 2023.
- American Physical Society - Division of Nuclear Physics fall meeting. Hyatt Regency Hotel, New Orleans, LA, October 29-31, 2022.
- Brookhaven National Laboratory Student Research Conference. Brookhaven National Lab Bldg. 488, Upton, NY, August 11th, 2022.