

Sevio Stanton

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Education

University of Colorado Boulder

Anticipated Graduation: May 2030

Ph.D. in Physics

- DOE Computational Graduate Research Fellow (2024-28)
 - Practicum at Lawrence Livermore National Laboratory (2026)
- NSF Graduate Research Fellowship Program – Awardee (declined) (2024)
- GEM Associate Fellow (2024)

Boise State University

Graduated May 2024

Bachelor of Science in Physics, Chemistry, & Biology (Triple Major)

Cumulative GPA: 4.0

with distinguished honors from the Honors College

- Emphases: Astrophysics & Biophysics; Biochemistry; Cellular, Molecular and Biomedical Biology
- Minor in Applied Mathematics
- Top 10 Scholar
- McNair Scholar
- NIH Bridges to the Baccalaureate Fellow (2021-23)
- Honors: *Summa Cum Laude*

College of Western Idaho

Graduated July 2021

Associate of Science in STEM, Chemistry, & Biology (Triple Major)

Cumulative GPA: 4.0

- Biology: Microbiological, Molecular, & Biomedical Emphasis
- Honors: *Summa Cum Laude*

Academic Certificate in Biotechnology

Publications

- The CMS Collaboration. Search for soft unclustered energy patterns in proton-proton collisions at 13 TeV. *CMS Physics Analysis Summary* (2023). <https://cds.cern.ch/record/2883117?ln=en>
- Whiting, R.; **Stanton, S.**; Kucheriava, M.; Smith, A.R.; Pitts, M.; Robertson, D.; Kammer, J.; Li, Z.; Fologea, D. Hypo-Osmotic Stress and Pore-Forming Toxins Adjust the Lipid Order in Sheep Red Blood Cell Membranes. *Membranes* (2023), 13, 620. <https://doi.org/10.3390/membranes13070620>
- Adams, E. R., Jackson, B., Johnson, S., Ciardi, D. R., Cochran, W. D., Endl, M., Everett, M. E., Furlan, E., Howell, S. B., Jayanthi, P., MacQueen, P. J., Matson, R. A., Partyka-Worley, C., Schlieder, J., Scott, N. J., **Stanton, S. M.**, & Ziegler, C. (2021). Ultra-short-period planets in K2. III. neighbors are common with 13 new Multiplanet systems and 10 newly validated planets in campaigns 0–8 and 10. *The Planetary Science Journal*, 2(4), 152. <https://doi.org/10.3847/psj/ac0ea0>

Research Experience

Research Assistant – Physics Department

May 2025 – Present

University of Colorado Boulder

PI: Dr. Ethan Neil

- Project: Building a JAX-Based Hybrid Monte Carlo Engine for Φ^4 Theory
 - Constructed a parallelizable HMC module in Python for scalar lattice models that JIT compiles hardware agnostically to enable physics exploration without placing low-level refactoring burdens on the user
 - Fellowship: Department of Energy Computational Science Graduate Fellowship (DOE CSGF)

Intern – Physical & Life Sciences

May 2026 – August 2026

Lawrence Livermore National Laboratory

PIs: Dr. Pavlos Vranas & Dr. Aaron Meyer

- Project: Building Lattice-QCD Workflows from Hadron Masses to Scattering
 - This project builds toward a ρ -resonance $\pi\pi$ -scattering calculation on stout-smear Mobius domain-wall fermion (MDWF) ensembles, with anticipated extension to two-baryon scattering. As a first validation step, we analyzed existing single-hadron pion and nucleon correlators to establish fitting, uncertainty propagation, and model-averaging workflows.
 - Fellowship: Department of Energy Computational Science Graduate Fellowship (DOE CSGF)

Research Assistant – Physics Department

November 2022 – August 2024

Boise State University

PI: Dr. Daniel Fologea

- Project: Hypo-Osmotic Stress and Pore-Forming Toxins Adjust the Lipid Order in Sheep Red Blood Cell Membranes.
 - Used fluorescence spectroscopy with the solvato-chromatic dye laurdan to experimentally determine the effect of pore-forming toxin lysenin on the fluidity of lipid membranes.
 - Fellowship 1: Ronald E. McNair Postbaccalaureate Achievement Program (McNair Scholars)
 - Fellowship 2: Center of Biomedical Research Excellence in Convergent Engineering & Biomolecular Science Summer Research Fellowship (COBRE)

Intern – Physics Department

June 2023 – August 2023

Massachusetts Institute of Technology

PI: Dr. Christoph Paus & Dr. Chad Freer

- Project: A Search for Soft-Unclustered-Energy-Patterns (SUEP)
 - Used batch computing in a Python environment to analyze Monte Carlo simulation data in a proof of concept experiment to demonstrate that a SUEP signature could feasibly be isolated from Standard Model background processes in Compact Muon Solenoid (CMS) experiment data in a novel muon-based analysis.
 - Fellowship: MIT Summer Research Program (MSRP)

Research Assistant – Chemistry Department

July 2022 – August 2022

Boise State University

PI: Dr. Brian McClain

- Project: Reduction Kinetics of Methylene Blue to Leucomethylene Blue
 - Developed research method to further investigate experimental results found to be inconsistent with a rate law published in literature.
 - Used temperature-controlled UV-Vis spectroscopy to evaluate the kinetics and activation energy of methylene blue's reduction with ascorbic acid, and its dependence on solvated oxygen and solvent temperature.

Research Assistant – Chemistry Department

June 2021 – August 2022

Boise State University
PI: Dr. Ken Cornell

- Project: Quantitation of Reactive Oxygen & Nitrogen Species (RONs) Generated by Cold Atmospheric Pressure Plasma (CAPP) Discharge
 - Used UV-Vis and fluorescence spectroscopy to identify and quantitate the reactive oxygen species produced by a custom cold plasma device.
 - Scripted a python program to perform statistical analysis on all RONs concentration data collected by all lab members.
 - Fellowship: Southwestern Idaho Bridges to Baccalaureate (B2B)
- Project: Analyzing the Oxidative Damage on Biomolecules by RONs Delivered by CAPP
 - Used HPLC-MS to identify the oxidative damage induced on lipids, amino acids, and nucleic acids by CAPP treatment.
 - Fellowship: Southwestern Idaho Bridges to Baccalaureate (B2B)

Research Assistant – Physics Department

June 2019 – June 2021

Boise State University

PI: Dr. Brian Jackson

- Project: Ultra-short-period planets in K2. III. neighbors are common with 13 new Multiplanet systems and 10 newly validated planets in campaigns 0–8 and 10
 - Assisted in an exoplanet identification project that used the EVEREST photometry pipeline.
- Project: Exploring the Relationship Between Exoplanet Orbital Architecture and Host Star Compositions
 - Compared physical properties of planets, stars, and solar systems to gain insight on the evolutionary trajectory of solar systems, particularly ones which host hot Jupiters and ultra-short-period planets.
 - Fellowship: LSAMP Summer Research Experience for Undergraduates

Intern – Scientific Computing Division

May 2020 – July 2020

Fermilab

PI: Dr. Brian Nord

- Project: Optimizing Telescope Scheduling with Machine Learning
 - Performed self-study of astronomy applications of artificial intelligence within a newly virtual format due to COVID-19 pandemic.
 - Attended remote artificial intelligence ethics seminars.
 - Fellowship: Summer Internships in Science & Technology at Fermilab (SIST)

Conference Presentations

- **2026 CSGF Annual Review** (Poster) Summer 2026
Washington, D.C.
- **2025 CSGF Annual Review** (Poster) Summer 2025
Washington, D.C.
- **Physics Senior Seminar** (Oral) Spring 2024
Boise State University, Boise, Idaho

▪ MIT Summer Research Forum (Poster) <i>Massachusetts Institute of Technology, Cambridge, Massachusetts</i>	Summer 2023
▪ National Conference for McNair Scholars & Undergraduate Research (Poster) <i>University of Maryland, College Park, Maryland</i>	Spring 2023
▪ IDeA Network of Biomedical Research (INBRE) Research Conference (Poster) <i>University of Idaho, Moscow, Idaho</i>	Summer 2021
▪ Idaho Conference on Undergraduate Research (ICUR) (Poster, Virtual) <i>Boise State University, Boise, Idaho</i>	Summer 2021
▪ 5 Minutes, 5 Slides (Oral, Virtual) <i>Fermilab, Batavia, Illinois</i>	Summer 2020
▪ Connections Project (Poster, Virtual) <i>College of Western Idaho, Nampa, Idaho</i>	Spring 2020
▪ Undergraduate Research Fair (Poster) <i>College of Western Idaho, Nampa, Idaho</i>	Fall 2019
▪ Summer Research Symposium (Oral) <i>Boise State University, Boise, Idaho</i>	Summer 2019
▪ Idaho Conference on Undergraduate Research (ICUR) (Poster) <i>Boise State University, Boise, Idaho</i>	Summer 2019

Awards & Recognition

Research Fellowships

▪ DOE Computational Science Graduate Fellowship (CSGF)	2024-28
▪ NSF Graduate Research Fellowship (GRFP)	2024-27
▪ GEM Associate Fellowship	2024-29
▪ Center of Biomedical Research Excellence in Convergent Engineering & Biomolecular Science (COBRE-CEBS)	2024
▪ Ronald E. McNair Postbaccalaureate Achievement Program (McNair Scholars) (\$2,500)	2022-24
▪ Massachusetts Institute of Technology Summer Research Program (MSRP) (\$5,600)	2023
▪ NIH Southwestern Idaho Bridges to Baccalaureate (SWID B2B) Fellowship (~\$20,000)	2021-23
▪ Summer Internships in Science & Technology (SIST) at Fermilab (\$7,000)	2020

- LSAMP Summer Research Experience for Undergraduates (\$2,500) 2019

Academic and Leadership Awards

- LSAMP Bridge to the Doctorate Affiliate Fellow – University of Colorado Boulder 2025
- Top 10 Scholar – Boise State University 2024
- College of Arts and Sciences Top Scholar – Boise State University 2024
- Excellence in Undergraduate Research and Creative Activity - Boise State University 2024
- Prospective Ph.D. Preview (P3) Scholar – Princeton University 2023
- ASPIRE Scholar – University of Illinois Urbana-Champaign 2023
- GPS Scholar – The Ohio State University 2023
- MIT Summer Research Program MVP (Week 7) – MIT 2023
- ACS Undergraduate Award in Physical Chemistry – Boise State University 2023
- Dean's List – Boise State University 2020-23
- Physical Chemistry Student of the Year – Boise State University 2022
- 2nd Place Poster for Student's Choice – INBRE Summer Research Conference 2021
- Top Voted Poster at ICUR – Boise State University 2021
- President's List – College of Western Idaho 2018-20
- President's Writing Awards: Original Research, 1st Place – College of Western Idaho 2020
- Connections Project Excellence Award, Inspire Category: 2nd Place – College of Western Idaho 2020
- LSAMP Leadership Scholar (hosted at University of Washington) – College of Western Idaho 2019

Scholarships

- Tony Barker Physics Scholarship 2024-25
- Honcik Physics Scholarship 2023-24
- Hibbs Family Scholarship 2023-24
- The Duane & Lori Stueckle Honors College Scholarship 2023-24
- Idaho Opportunity Scholarship 2023-24
- Osher Reentry Scholarship 2023-24
- Linda Mercer COAS Science Scholarship 2023-24
- Honcik Physics Scholarship 2022-23

▪ Schimpf Chemistry Scholarship	2022-23
▪ Hibbs Family Chemistry Award	2022-23
▪ Idaho Opportunity Scholarship	2022-23
▪ Osher Reentry Scholarship	2021-22
▪ Physics Department Scholarship	2021-22
▪ Dr. Robert W. Ellis Chemistry Scholarship	2021-22
▪ Hibbs Family Chemistry Award	2021-22
▪ Idaho Opportunity Scholarship	2021-22
▪ Langroise Honors Scholarship	2021-22
▪ Boise State Scholarship Fund Recipient	2020-21
▪ Langroise Honors Scholarship	2020-21
▪ Presidential Transfer Scholarship	2020-21
▪ Osher Reentry Scholarship	2020-21
▪ Laura Moore Cunningham Scholarship	2019-20

Service

American Physical Society

Spring 2024 – Present

Northwest Section (NWS)

- Member-at-Large for Northwest Section (2024-2028)
- Congressional Visit Day (2026)
- Chaired NWS Annual Meeting HEP session (2025)

MIT Summer Research Program (MSRP)

Massachusetts Institute of Technology

- Application reviewer (2026)