

Ben Sherwin

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EDUCATION

Stanford University

PhD in Physics

Stanford, CA

Expected 2029

University of Florida

BS in Physics, Astrophysics, and Mathematics

Gainesville, FL

2024

RESEARCH INTERESTS

I am most interested in observational and theoretical cosmology with an emphasis on combining information from the Cosmic Microwave Background with surveys of large-scale structure.

RESEARCH POSITIONS

Graduate Student in Physics, Stanford University

2025

Modified 3x2 Analysis, Photo-z for CMB Lensing \times Lyman Break Galaxies | Advisor: Prof. Josh Frieman

Undergraduate Researcher in Astronomy, University of Florida

2022-2024

Searching for Parity Violation Using Topological Data Analysis on the 4PCF | Advisor: Prof. Zack Slepian

NSF REU Student, Georgia Institute of Technology

2023

Predicting the UV Escape Fraction of Simulated Galaxies during Reionization with ML | Advisor: Prof. John Wise

Undergraduate Researcher in Physics, University of Florida

2021-2022

Forward Modeling of Merger Event to Determine Black Hole Properties | Advisor: Prof. Imre Bartos

PUBLICATIONS

- J. Tayar et al. (inc. **B. Sherwin**), “The Importance of Neural Network Hyperparameters in Age Inference Quality” (2023), [Research Notes of the AAS](#)
- **B. Sherwin**, S. Sethuram, C. Brummel-Smith, J.H. Wise, “Predicting the UV Escape Fraction of the First Galaxies in the Renaissance Simulations with Machine Learning” (2023), [Research Notes of the AAS](#)
- **B. Sherwin**, “Analyzing Phenotypic Properties of Bladder Cancer Using Ordinary Differential Equations” (2019), [bioRxiv](#)

POSTERS AND TALKS

- *Pulsar Timing Arrays and the Gravitational Wave Background*, Meetings of Astrophysics Students at Stanford, 2025
- *Cosmology Pedagogy Talk*, Meetings of Astrophysics Students at Stanford, 2025
- *Cosmic Neutrino Background: A Story of Epic Proportions*, Meetings of Astrophysics Students at Stanford, 2025
- *Predicting the UV Escape Fraction of the First Galaxies in the Renaissance Simulations with Machine Learning*, 243rd AAS Meeting, 2024
- *Searching for Parity Violation Using Topological Data Analysis on the Galaxy 4-Point Correlation Function*, UF Research Symposium, 2023

TEACHING

- Physics 16: The Origin and Development of the Cosmos, 2025
- Physics 44: Electricity and Magnetism Lab, 2025

AWARDS

- NSF Graduate Research Fellowship (\$159,000)
- Fletcher Jones Foundation Fellowship (\$15,600)
- UF Platinum Presidential Scholarship (\$40,000)
- UF College of Liberal Arts Excellence Award (\$3,500)

SERVICE AND LEADERSHIP

Member, Stanford Physics Equity & Inclusion Committee <i>Working with faculty, postdocs, and students to improve climate within Stanford Physics</i>	2026
Program Manager, Stanford PIE (Physics Inclusion and Equity) Program <i>Led program assisting 200 undergraduate students across the U.S. with the graduate school application process</i>	2025
Executive Member, Graduate Students of Applied Physics and Physics (GSAPP) <i>Planned social and departmental events for over 400 Stanford graduate students</i>	2025
President, UF Society of Physics Students <i>Spearheaded efforts to increase faculty-student engagement; hosted events for research/career opportunities</i>	2022-2024
Member, UF Physics IDEA (Inclusion, Diversity, and Equity Alliance) <i>Worked with faculty, staff, and students to broaden participation in physics at all levels</i>	2022-2024
Ambassador, Center for Undergraduate Research <i>Promoted undergraduate research in the UF College of Liberal Arts and Sciences</i>	2023-2024
Member, University Liaison Council <i>Communicated across departments to encourage students to begin research in underrepresented fields</i>	2023-2024

OUTREACH AND MENTORSHIP

Author, Astrobites <i>Write blog posts to convey the main ideas of astrophysics papers at an undergraduate level</i>	2025–Present
Tour Guide, SLAC National Accelerator Laboratory <i>Led public and educational tours of SLAC</i>	2025
Mentor, Stanford Undergraduate Directed Reading Program <i>Helped students understand a DESI results paper and gave introductory cosmology lectures</i>	2025
Lecturer, Stanford Splash Program <i>Created one-day classes on the cosmic distance ladder, dark matter, and dark energy for 100+ high school students</i>	2025
Booth Leader, KIPAC Community Day <i>Led a team of volunteers to demonstrate the concept of general relativity to 8000 attendees</i>	2025
Pen Pal, Letters to a Pre-Scientist <i>Wrote letters each quarter to a middle-schooler interested in space</i>	2025
Panel Member, Ethics in Physics Workshop <i>Contributed to discussions about ethical research and issues in physics</i>	2025
Treasurer, Science Communicators <i>Handled financials and organized events for writing, video production, and journalism</i>	2021-2022
Lead Organizer, UN International Women in Science Day <i>Coordinated efforts across STEM departments to connect to local K-12 students with demos</i>	2023-2024