

Sara Wilson

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Education

University of Pittsburgh

Bachelor of Science in Mathematics
Minor in Computer Science, GSWS Certificate

Pittsburgh, PA
Expected May 2026

Research Experience

University of Alabama

Semiconductor Engineering Researcher

Tuscaloosa, AL
June 2025 – July 2025

- Worked on project concerning wireless power transfer for monolithic and heterogeneous integration of 3D integrated devices that rely heavily on computation, numerical simulation, and design

West Virginia University

Applied Analysis Researcher

Morgantown, WV
June 2024 – July 2024

- Expanded work involving a 2×2 Keyfitz-Kranzer type balance system with varying Chaplygin gas, a model for dark energy and dark matter
- Utilized numerical methods, particularly the local Lax-Friedrich scheme, adapting the implementation for time-dependent wave speeds
- Analyzed system dynamics, verifying delta-shocks and regional changes over time

Teaching Experience

University of Pittsburgh

Teaching Assistant

Pittsburgh, PA
Aug 2024 – Current

- Instructed weekly recitation sessions and held office hours to reinforce lecture material and facilitate active student engagement

University of Pittsburgh

Mathematics Tutor

Pittsburgh, PA
Jan 2023 – Aug 2024

- Provided direction and guidance via individualized sessions to students struggling in mathematics, from college algebra through differential equations

Projects and Publications

An Analysis of a 2×2 Keyfitz-Kranzer Type Balance System with Varying Generalized Chaplygin Gas

Sept 2024

Jack Frew, Nigel Keyser, Ethan Kim, Griffin Paddock, Camden Toumbleston, **Sara Wilson**, Charis Tsikkou

[10.1063/5.0231413](https://doi.org/10.1063/5.0231413) [🔗](#)

Professional Development

Princeton University

Summer School in Fluids and Computer Assisted Proofs

Princeton, NJ
Aug 2025

University of Alabama

Summer Research Symposium

Tuscaloosa, AL
July 2025

Texas A&M University
Summer School in Modeling and Simulation of PDEs

College Station, TX
May 2025

Joint Mathematics Meetings
Pi Mu Epsilon Poster Session

Seattle, WA
Jan 2025

West Virginia University
Summer Research Symposium

Morgantown, WV
July 2024

Skills

Technical: MATLAB, Python, MIPS, Java, \LaTeX