Sofia Stepanoff
Orchid ID: 0000-0002-7850-7093
Email: sofiastepanoff17@gmail.com
Mobile: (609)-613-3647

Education

- **The College of New Jersey** — Ewing, New Jersey
  Applied Mathematics and Physics with Astrophysics Specialization: GPA: 3.762 — *Fall 2019 - Present*

  Current Courses: *Mathematics Capstone: MAT498, Advance Geology: PHY220, Clouds and Climate: MAT345, Advance Experimental Physics: PHY451*

  Relevant Courses: *Extra Galactic Astronomy: PHY361 (A), Intro Astrophysics: PHY466 (A), Partial Differential Equations: MAT426 (A)*

- **Mercer County Community College** — West Windsor, New Jersey
  AS Business Administration and AS Mathematics; GPA: 3.98 — *Graduated May 2019*

  Honors: *Highest Honors, Phi Theta Kappa, Alpha Mu Gamma*

Publications

- M. Goebel, S. Stepanoff, M. S. Mizuhara, Twisted States in the Kuramoto Model on Lattices, Published in AIP Choas
- L. Lanz, S. Stepanoff, Are Active Galactic Nuclei in Post-Starburst Galaxies Driving the Change or Along for the Ride?, in review at The Astrophysical Journal

Experience

- **Improving Efficiency of the 26 inch Telescope** — United States Naval Observatory, Washington DC
  Advisor: Dr. Rachel Matson — *June -August 2021*
  NREIP Intern (Full-time)
  - *Created a GUI program in python to log telescope information with compatibly for Windows XP*
  - *Analyzed double star data to determine the speckle cameras resolving limitations*
  - *Created a program to pull in information from published papers for addition to the double star orbit catalog*
  - *Operated the 26 inch telescope on observing double stars*

- **Dynamics of Coupled Oscillators on 2D Lattices** — Remote, The College of New Jersey
  Advisor: Dr. Matthew Mizuhara — *August 2020-May 2021*
  Role: Student Researcher (Part-time)
  - *Applied equations for 1D twisted states and applied them to 2D twisted states*
  - *Writing MATLAB code to simulate dynamics of 2D Kuramoto oscillators on lattices and analyze long term behaviors*
  - *Developed theory for explicit conditions for when 2D twisted states are stable*
  - *Worked with the high performance computing cluster at TCNJ to run the simulations and collect data*

- **Do Super Massive Black Holes Aid in Transitioning Galaxies?** — Remote, The College of New Jersey
  Advisor: Dr. Lauranne Lanz — *June - September 2020*
  Role: Student Researcher (Full-time)
  - *Used CIAO/Sherpa to create Python code to simulate Chandra and NuSTAR telescopes*
  - *Used ds9 to extrapolate data of galaxies for analysis*
  - *Created mock spectra and analysis graphs of telescope data*
  - *Wrote technical report to summarize project results*

Work Experience

Bicycle Mechanic — Pennington, NJ
Hart's Cyclery — *May 2013-April 2020*
- *Build and maintain precision mountain, road, and triathlon bicycles.*
- *Sold high end bicycles to avid triathletes and professional cyclists*
- *Anticipated shops needs by ordering stock and parts to ensure smooth work flow*
- *Trained new hires in bicycles repairs and sales*

Honors and Awards

- Dean's List- Spring 2020, Fall 2020, Spring 2021
- High Achieving Student Athlete - May 2019
- Mercer County Freeholders Scholarship - May 2017

Talks and Colloquiums

- Physics Department Colloquium: The College of New Jersey - December 2021
  Impact of Light Pollution on the 0.7m PlaneWave Telescope
- NREIP Presentation: Washington DC - August 2021
  Improving Efficiency of the 26 inch Telescope
- Celebration of Student Achievement: The College of New Jersey Math Department - May 2020
  Dynamics of Coupled Oscillators on 2D Lattices
- Garden State Undergraduate Mathematics Conference: Remote- April 2021
  Dynamics of Coupled Oscillators on 2D Lattices
- Physics Department Colloquium: The College of New Jersey - September 2020
  How Powerful are Supermassive Black Holes in Transitioning Galaxies?

Outreach

- 5th Grade Astronomy Talk at Hopewell Elementary School, Hopewell New Jersey- June 2021

Skills Summary

- **Languages**: Python, Java, LaTex, MATLAB
- **Has worked with**: Arduino, Mathematica, Microsoft Suite, ds9, Adobe Premiere