

Samuel Coscia

5713 SE 50th Avenue
Portland, Oregon
97206

sfcoscia2002@gmail.com
+1 267 858 7105

Education

Reed College
Physics major

August 2020 – May 2024
Portland, Oregon

Relevant courses: Introduction to General Relativity, Topics of Astrophysical Interest, Quantum Mechanics I and II, Electrodynamics I and II, Thermal Physics, Junior Advanced Laboratory I and II, Classical Mechanics I, Mathematical Methods of Oscillations and Waves, Modern Physics, Vector Calculus, and Linear Algebra.

Thesis: *Extracting Cosmological Parameters from Cosmic Microwave Background Temperature Map Data*

Research Experience

Postbaccalaureate Intern

May 2024 – August 2024

Los Alamos National Lab

Los Alamos, New Mexico

- Worked in the Intelligence and Space Research group on the DIORAMA Project which simulates radiation from nuclear detonation
- Learned extensive radiation transport physics and atmospheric modeling
- Worked on a large code base with several collaborators, primarily running particle and atmospheric simulations
- Used Linux command line, Bash scripting, Python, C++ and CERN's particle physics simulation platform, Geant4, to test the physics of the code base
- Created documentation for end-users

Research Assistant

May 2023 – August 2023

Temple University, Jim Napolitano Research Group

Philadelphia, Pennsylvania

- Worked on reducing uncertainty in several experimental aspects of the Jefferson Lab MOLLER experiment (measurement of a lepton-lepton electroweak reaction)
- Quantified deadtime on the DT5810B Detector Emulator for installation at the Jefferson Lab Accelerator Facility
- Helped design and set up an experiment to measure right-circular magnetic dichroism for corrections in the MOLLER experiment
- Presented our work to Jefferson Lab researchers

Research Assistant

May 2022 – September 2022

Reed College, Noah Charles Research Group

Portland, Oregon

- Generated multifractal density distributions to high resolution
- Designed code to calculate the statistical multifractal spectrum of an input density plot
- Quantified multifractality in the Buddhabrot set fractal
- Presented our findings at the Reed College summer research event

Research Presentations

Coscia, S., Charles, N. (2022, September). Multifractality of the Buddhabrot Fractal. Poster session presented at Reed College summer research expo.

Teaching Experience

Physics 101/102 Lab Teaching Assistant

August 2021 – May 2024

Reed College Physics Department

Portland, Oregon

- Facilitated introductory physics labs at Reed College
- Gave mini-lectures before each lab to introduce relevant material
- Graded lab reports
- Helped modify the course curriculum

Quantum Mechanics Tutor

September 2024 – Now

Varsity Tutors

Portland, Oregon

- Facilitated tutoring sessions to cover topics of students' choice.
- Presented informal lectures on subjects within Quantum Mechanics such as angular momentum, spin, rotations, and translations.
- Created lecture notes for students to study after our sessions.

University Service

Society of Physics Students, Underclassmen Liason

September 2022 – May 2024

Reed College Physics Department

Portland, Oregon

- Acted as a communicator between underclassmen physics students and faculty
- Facilitated community events physics students
- Addressed educational concerns of students

Specialized Skills

Programming Languages and Mathematical Packages: BASH, Python, JavaScript, C, C++, HTML, LabVIEW, Arduino, Git Version Control, xml, Markdown, reST, Sphinx, LaTeX, astropy, healpy, numpy, pandas, HEALPix

Operating Systems: Windows OS, Linux OS (Ubuntu), Mac OS

Other: 3D Printing and modelling, robotics, electronics and circuitry, lab instrumentation (oscilloscopes, lock-in amplifiers, etc.)

References

Mark Galassi, ISR-1 Group Mentor and Researcher

Intelligence and Space Research

Los Alamos National Lab

mark@galassi.org

Alison Crocker, A.A. Knowlton Associate Professor of Physics (Department Chair)

Department of Physics

Reed College

crockera@reed.edu

Noah Charles, Assistant Professor

Department of Physics

Reed College

ncharles@reed.edu

Jim Napolitano, Professor

College of Science and Technology, Department of Physics

Temple University

napolj@temple.edu