Angelina Minocha

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Education

University of Central Florida **Orlando, FL**
PhD in Planetary Science Aug 2024-Present

Washington University in St. Louis **St. Louis, MO**
B.A. in Physics Aug 2019-May 2023
Minor: German
Cum Laude & Distinction in Physics

Research Experience

University of Central Florida **Orlando, FL**
Dept. of Physics Aug 2024-Present
Graduate Research Assistant
Advisor: Dr. Kerri Donaldson Hanna
• Utilized MIR and VNIR spectrometry to analyze spinel and other mineral mixtures, investigating spectral signatures to better interpret the composition of the lunar crust.
• Wrote code to streamline the visualization of data from various spectrometers, enhancing efficiency and accessibility for myself and other research group members.

Washington University **St. Louis, MO**
NASA's ANGSA Program – Dept. of Physics and Dept. of EPSc May 2022-Apr 2023
Undergraduate Research Assistant
Advisor: Dr. Ryan Ogliore
• Designed and developed the QMETool using JavaScript to visualize optical, electron and quantitative X-ray maps to advance mineralogical studies of extraterrestrial samples.
• Leveraged MATLAB's control point selection to improve image registration in the QMETool.
  • Adapted from use of automatic to manual control point selection, ensuring minimal co-registration errors.

Department of Physics May 2021-Apr 2022
Undergraduate Research Assistant
Advisor: Dr. Johanna Nagy
• Programmed power supplies, pressure gauges and thermometers - using Python - for operation and data collection in CMB Telescopes.
• 3D modeled existing parts and designed new ones for dilution refrigerator cryostats using SolidWorks.
• Vacuum Tested and prepared for Dilution Refrigerator installation in wet cryostat.

Teaching Experience

University of Central Florida **Orlando, FL**

Department of Physics Aug 2024 – Present

Graduate Teaching Assistant – Physics I & II

• Guided students in problem-solving and developing confidence in approaching challenging concepts.
• Assisted students in applying critical-thinking and analytical skills in lab work.
• Efficiently completed all assigned grading tasks within the instructor's specified deadlines, ensuring accurate and timely feedback.

Solebury School **New Hope, PA**

Science Department Aug 2023 – June 2024

Physics Teacher

• Developed and implemented curriculum for 3 levels of Physics courses for 48 high school students.
• Incorporated scientific literacy and diversity awareness in the classroom.
• Cultivated student-driven learning through innovative labs and unique assessment strategies.

Washington University **St. Louis, MO**

The Learning Center Aug 2020 – Dec 2022

Peer Mentor - Calculus II

• Mentored over 60 students under the Peer-Led Team Learning (PLTL) program.
• Coached students in developing problem-solving and analytical-reasoning skills, through course-related problems.

Department of Physics Jan 2022 – Apr 2023

Teaching Assistant - Physics I & Introduction to Astrophysics

• Hosted weekly office hours to aid students in homework and exam preparation.
• Planned review material and adapted teaching strategies to match student needs.
• Graded student submissions and provided detailed feedback to over 100 students each semester.

Publications

Carpenter, P. K., Ogliore, R. C., **Minocha, A**., Yen, C. J., and Jolliff, B. L. (2023). Quantitative microanalysis explorer: NEXT-generation analytical tool for study of Apollo 17 core 73002,6015-6018. *Microscopy and Microanalysis, 29*(Supplement_1), 842–843, doi:/10.1093/micmic/ozad067.418.

Minocha, A., The Quantitative Microanalysis Explorer: Introducing web-based visualization for optical, electron, and quantitative x-ray maps for studying lunar samples, https://openscholarship.wustl.edu/undergrad_etd/57/.

Minocha, A., Ogliore, R. C., Carpenter, P. K., and Jolliff, B. L. (2022). Quantitative Microanalysis Explorer: A web-based visualization software for visualization of optical, electron, and quantitative x-ray maps. *Apollo 17 - ANGSA Workshop 2022,* Abstract #2019.

Carpenter, P. K., Ogliore, R. C., **Minocha, A**., Yen, C. J., and Jolliff, B. L. (2022). Advances in quantitative EPMA compositional mapping applied to Apollo 17 core 73002, 6015-6018. *Apollo 17 - ANGSA Workshop 2022,* Abstract #2031.

Yen, C. J.-K., Jolliff, B. L., Carpenter, P. K., **Minocha, A.**, Ogliore, R. C., Kent, J. J., Zeigler, R. A., Gross, J., and Shearer, C. K. (2022). Guided search of volcanic glasses in continuous thin sections of 73002. *Apollo 17 - ANGSA Workshop 2022,* Abstract #2010.

Jolliff, B. L., Carpenter, P. K., Yen, C. J.-K., Neuman, M. D., Ogliore, R. C., and **Minocha, A.** (2022). In search of prebasin highlands components and Tycho ejecta in apollo 17 drive tube 73002 using continuous core section quantitative analysis. *Apollo 17 - ANGSA Workshop 2022,* Abstract #2043.

Posters and Presentations

Minocha, A. (2022, November 11-12). *Quantitative Microanalysis Explorer: A web-based visualization software for visualization of optical, electron, and quantitative x-ray maps* [Poster Presentation]. Midstates Physical Sciences, Math and Computer Science Undergraduate Research Symposium, St. Louis, MO, USA. http://bit.ly/3LM3R1h

Minocha, A. (2022, October 26-28). *Quantitative Microanalysis Explorer: A web-based visualization software for visualization of optical, electron, and quantitative x-ray maps* [Conference session]. Apollo 17 ANGSA workshop, Houston, TX, USA.

Minocha, A. (2022, April 20-30). Cryogenic Testbed Commissioning for Cosmic Microwave Background Telescopes [Poster Presentation]. Washington University Undergraduate Research Symposium, St. Louis, MO, USA. https://symposium.foragerone.com/celebration-of-undergraduate-research-spring-2022/presentations/43790

Skills

Software

Java, Python, JavaScript, MATLAB, R, Logger-Pro and SolidWorks

Equipment

FTIR Spectrometer, SEM, EPMA, STM, Diode Laser and NanoSIMS

Communication and Languages

Public speaking, Technical writing, Spanish, German, French and Hindi

Honors and Awards

University of Central Florida Graduate Dean's Fellowship, 2024
The Baines Family Planetary Science Scholarship, 2023
First Place, WashU Physics Research Symposium, 2022
Schmitt-Cernan-Evans Travel Award, 2022
Summer Research Fellowship, McDonnell Center for Space Sciences, 2021 & 2022
Dean's List, Washington University, 2019-2023

Leadership, Outreach & Service

Scientist in Every Florida School Program **Florida**

Volunteer 2024-present

• Engaged K-12 students in Title I schools with interactive lessons on space science, fostering interest in STEM fields.
• Designed and delivered accessible presentations to bridge the gap between students and cutting-edge research.

Office of International Students and Scholars, Washington University **St. Louis, MO**

International Student Orientation Leader 2020-2023

• Conducted orientation events to inform and engage new students with the university.
• Ideated and executed activities to help students studying remotely to feel connected to the student body.

Professional Memberships

American Physical Society (APS), *2021-Present*
Society of Physics Students (SPS) – Washington University, *2021-2023*