Sebastian Cangahuala
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Education

Case Western Reserve University, Cleveland, OH August 2020 - August 2024

Major: Geological Sciences
Minor: Evolutionary Biology
Cumulative GPA: 3.55

Work Experiences

Pomona College, Research Assistant
September 2024 - Present, Claremont, CA
Assist Dr. Jade Star Lackey with experimental petrology projects

- Perform XRF bulk analysis on rock samples from Sequoia, Kings Canyon, and the Sierras
- Perform XRF halogen analysis on rock samples from Sequoia and Kings Canyon

Jet Propulsion Laboratory
Summer 2024, Pasadena, CA
Create elemental maps through scanning electron microscopy for the Moon Diver project for Dr. Laura Kerber

- Polish and carbon coat core samples taken from lava fields at Tabernacle Hill, Utah
- Create montaged maps of elements in core samples
- Use XMapTools to verify percent composition of each mineral phase in samples

Ohio State University, Research Intern
Summer 2023, Wooster, OH
Perform specialty crop entomology research for integrated pest management projects with Dr. Ashley Leach

- Monitor San Jose Scale (known to infest apple orchards) with sticky traps
- Monitor effects of pesticide use on bee populations that live in cucurbit fields
- Monitor Spotted Lanternfly in grape vineyards throughout Ohio to assess how and where the lanternflies come from
- Assess how different types of plastic mulch may affect numbers of insect pests/growth rates of pepper plants across a growing season

Case Western Reserve University, Research Intern
Summer 2022, Cleveland, OH
Perform geological research experiments with George Amulele and Dr. James Van Orman for metamorphosis projects

- Used a multi-anvil press to simulate temperatures and pressures deep below the surface to

see how minerals changed/diffused
- Used a scanning electron microscope to evaluate how far minerals diffused across a contact boundary under varying high pressure conditions
- Used an Impedance spectrometer to evaluate conductivity levels as samples were brought to higher pressures to determine if they were the cause of localized high conductivity in the mantle beneath the South American plate

Case Western Reserve University, Research Assistant
Fall 2021 - Spring 2022, Cleveland, OH
Assist with preparation of materials for project on the fate of banded iron formations with George Amulele
- Used an anvil press to create salt cells which were used in pressurized experiments
- Created thermocouple wires which were used to take temperature readings during experiments

Academic Experiences

Research Project: High Conductivity in Deep Subducted Continental Crust
Case Western Reserve University, Spring 2023 - Spring 2024
- Aimed to figure out what is causing high conductivity in subducted continental crust beneath Argentina
- Placed suspected minerals (jadeite and liebermannite) in simulated mantle conditions (high pressures and temperatures) and monitored conductivity as pressures increased (simulting deeper mantle conditions)
- Evaluated mineral samples under scanning electron microscope to determine diffusion rates of sodium ions from jadeite through the tubular crystalline structure of liebermannite
- Project is still ongoing; conclusions will be discussed during my senior capstone presentation

Geological Conference: Geological Society of America Conference
Pittsburgh, PA, October 2023
- Attended the GSA Connects Conference in Pittsburgh, PA
- Gained insight into mineral formation in potential Mars analogous environments and alluvial fan deposition on Mars

Related Coursework

Mathematics: Calculus for Science & Engineering I, Calculus for Science & Engineering II, Introduction to Linear Algebra, Statistics

Chemistry: Principles of Chemistry I, Principles of Chemistry II, Principles of Chemistry Lab, Physical Chemistry I

Physics: Introductory Physics I, Introductory Physics II

Computer Programming: Elementary Computer Programming

Geology: Physical Geology, Earth History, Geology Laboratory, Environmental Geology, Stratigraphy/Sedimentation, Intro to Geological Research, Structural Geology & Geodynamics, Geological Senior Project, Mineralogy, Geological Professional Presentation, Igneous/Metamorphic Petrology, Introduction to Field Methods

Astronomy: Einstein's Universe

Skills

MATLAB - intermediate

Multi-anvil Press Operation - intermediate

Electron Microscopy - advanced

Extracurricular activities

CWRU Geological Society: Treasurer
August 2023 - May 2024

- Manage funds for the student geology club on campus

Academic Publications

Vourlitis, G.L.; van der Veen, E.L.; Cangahuala, S., et al. Examining Decomposition and Nitrogen Mineralization in Five Common Urban Habitat Types across Southern California to Inform Sustainable Landscaping. Urban Sci. 2022, 6, 61.
https://doi.org/10.3390/urbansci6030061

Awards

April 2024 Carol W. Walker Award for Outstanding Senior Project in the Department of Earth, Environmental, and Planetary Sciences
April 2024 CWRU Dean's High Honors List for the Fall 2023 semester
March 2024 CWRU Scholar of Distinction
March 2023 CWRU Scholar of Distinction
February 2023 CWRU Dean's High Honors List for the Fall 2022 semester
March 2022 CWRU Scholar of Distinction
March 2022 CWRU Dean's Honors List for the Fall 2021 Semester