

Siena Smania

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RESEARCH INTERESTS

Geology, microbial ecology, environmental microbiology, environmental science, hydrogeology

EDUCATION

MS, Geological Sciences

Arizona State University - *School of Earth and Space Exploration (SESE)*

In Progress

Tempe, AZ

BS, Astrobiology & Biogeosciences

Arizona State University - *School of Earth and Space Exploration (SESE)*

Minors: *Biological Sciences, French*

May 2023

Tempe, AZ

GPA: 3.81/4.00

High School Diploma

Chaparral High School - GPA: 4.19/4.00

May 2019

Scottsdale, AZ

TECHNICAL SKILLS

Python R Microsoft Suite HEC-HMS MODFLOW qiime2

LAB SKILLS

DNA extractions Culturing Light Microscope Ion chromatography Field spectrometer

RESEARCH EXPERIENCE

Master's Thesis, SESE

Arizona State University - *Dr. Everett Shock, Dr. Elizabeth Trembath-Reichert*

In progress

Tempe, AZ

- Cultured hot spring microbial communities and soil microbes
- Grew microbes using plastic in their media with the goal of biodegradation
- Created a python notebook to generate geochemically informed media recipes

Senior Thesis, SESE

Arizona State University - *Dr. Everett Shock*

Aug. 2022 - May 2023

Tempe, AZ

- Extracted DNA from Yellowstone hot spring sediment samples
- Characterized 16s rRNA sequences from hot spring sediment samples using R
- Compared microorganism communities across a geochemical gradient

Space Grant Intern, NASA

Arizona State University - *Dr. Everett Shock*

Aug. 2022 – May 2023

Tempe, AZ

- Used a python program to calculate and compare energy supplies of Yellowstone hot springs across a geochemical gradient
- Participated in scientific outreach aimed towards students and the general public

IRES Intern, National Science Foundation

Gobabeb Research Institute - *Dr. Heather Throop*

Summer 2022

Gobabeb, Namibia

- Lead field experiments in the Namib desert pertaining to carbon and nitrogen cycling in dryland ecosystems
- Analyzed field data using R
- Presented research for science committee at Namibia University of Science and Technology (NUST)

Research apprentice

Aug. 2021 - May 2022

Arizona State University - *Dr. Maitrayee Bose*

Tempe, AZ

- Worked with meteorite accretion models to look at the trends and impacts the Late Heavy Bombardment period had on Earth's volatile inventory
- Read and critically analyzed literature to apply to the project; organized and ran data through spreadsheets while using python to model data

Astrobiological Research Collaboration

Fall 2021

Arizona State University - *Dr. Jordan Okie*

Tempe, AZ

- Collaborated with a group of 13 students to write a paper on the limitations to the complexity of life in the universe (limits on temperature, energy, space, and time)
- Created and ran a discord server to organize meetings and writing sessions with collaborators

OUTREACH

Outreach Officer, Students for the Exploration and Development of Space (SEDS) **Aug 2022 - May 2023**

Arizona State University - *Dr. Jim Bell*

Tempe, AZ

- Organized and ran various outreach events for space exploration and development with a wide range of audiences

Psyche Inspired Intern, NASA

Aug 2020 – May 2021

Arizona State University - *Dr. Cassie Bowman*

Tempe, AZ

- Developed [four art pieces](#) to aid in outreach about the NASA Psyche Mission

LEADERSHIP EXPERIENCE

Student Mentor, *Exploring SESE (SES191)*

Fall 2021, Fall 2022

Arizona State University - *Dr. Karen Knierman, Dr. Tom Sharp*

Tempe, AZ

- Led discussions on majors, research, and careers
- Led team-building exercises with over 70 freshmen
- Mentored over 50 freshmen in their introductory class

VOLUNTEERING

Paw Placement, *Kitty Caretaker*

Sept. 2017 - May 2019

- Cleaned cages, fed and played with cats, and aided in adoption processes of rescue

CLUBS

SEDS (Students of the Exploration and Development of Space) - ASU

Aug. 2019 - May 2023

GSA (Gay-Straight-Alliance) - Chaparral HS

Aug. 2015 - May 2019

Girls Who Code - Chaparral HS

Aug. 2015 - May 2019

HONORS & AWARDS

Best Craftsmanship Award (Saboten Con 2022)

Dean's List (Fall 2019 - Spring 2023)

New American University Scholar (Fall 2019 - Spring 2023)

RELEVANT COURSES

Biology I & II + Chemistry I & II + Physics I & II

Mineralogy

Geochemistry

Genetics

Ecology

Biology of Microorganisms + Microbiology Lab

Geomicrobiology

Thermodynamics of Natural Systems

Aqueous Solution Geochemistry

Hydrogeology

Hydrology

Sustainability Science

Biogeochemical Evolution of Earth

Plant and Algae Biotechnology