David Cavell

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Career Summary

Aug 2023 – Present **Idaho State University** **Expected Graduation 2025**
M.S. Student and TA

Overview

As an M.S. student, working on a volcanology project with Dr. Shannon Kobs Nawotniak understanding the physical, geochemical, and petrological processes of Sixmile Butte volcano in southern Idaho, USA. Determined mineral concentration changes throughout Sixmile Butte's lava flows, preparing samples for whole rock and trace element geochemistry. Running geochemical models (MELTS and Magma Chamber Simulator).

Taught three semesters of introductory geology labs for major and non-major students ensuring that they have the relevant knowledge and hands on experience of basic mineral and rock identification and basic geologic concepts.

TA'd Idaho State's geology field camp helping senior students put their geologic knowledge to practice in the field. Helping students locating themselves in different mapping environments, understanding and implementing standard mapping practices (e.g., Rule-of-Vs) and understanding varying geologic processes in stratigraphy, geomorphology, volcanology, metamorphism, and structures in the Lost River Range of Idaho.

Responsibilities

- Read relevant literature, run geochemical models, conduct field work, and prep samples for analysis
- Help teach geological principles and mapping techniques and grade students' assignment.

Relevant Courses

- Advanced Physical Geology
- Volcanology
- Programming GIS
- Writing Seminar
- Geology of N. America
- Geostatistics
- Wilderness First Aid
- Thermo-geochronology
- Quaternary Global Change

Jan 2023 – May 2023 **University of Idaho**
Graduate Student/TA

Overview
Grading course work for Geog-100 classes to help ensure students receive grades on their assignments in a timely manner so that adjustments based on their performance can be made.

Writing transcripts of the Geol-467, volcanology class, as well as creating in-lecture assignments for the course's Articulate slides to help facilitate online education.

Responsibilities

- Review and create assignment keys and grade students' assignment.
- Taking audio files and transcribing them into a document to allow people with differing learning requirements to succeed.

Aug 2022 – May 2023 **University of Idaho**
Lab Coordinator

Overview
Ensuring That the labs for the Geography 100 and Geology 101 & 111 labs have the materials they need for the student and the TAs to have a smooth and engaging educational experience.

Responsibilities

- Ensuring that each lab room has the minerals, rocks, and identifying equipment to accurately identify common rocks and minerals.
- Writing and distributing exams, midterm and final, for each of the labs.
- Ordering new supplies and materials as needed through use to maintain a complete inventory.
- Ensuring that all lesson materials are available for all TAs, as well as ensuring that online course can achieve as close to an in-person experience as possible.

Aug 2018 – Aug 2022 **University of Idaho** **Graduated 2022**
B.S Student, Lab Team Member, and Field Assistant

Overview
Preformed as a field assistant for field work at the 2018 Kilauea, Hi eruption to later lead and present data on a project resulting from field work and write a manuscript. Assisted in field work at Jordan Craters, OR collecting spectral analyses of lava rock samples. Assisted in public outreach on volcanic hazards related to Glacier Peak volcano in Darrington, WA.

Responsibilities

- Record observed field measurements (physical measurements of volcanic clast size, vesicles, fusion between spatter clast, mapping of lava flows and vent features in Craters of the Moons, mapping of simple and complex geologic units in Hurricane, UT and Dylan, MT, identification and noting of volcanic features from fall deposits, spatter and scoria cones and basalt flows, rhyolite flows, ignimbrites, and lahars, recording measurements of features for other students and team members) in varying terrains and weather (hot deserts, high-wind lava fields, tropical island, freezing rain, high elevation gain-and loss) from dawn to dusk over periods of days to weeks.
- Create thin sections from the collected samples, from billets to slides and imaging using a Scanning Electron Microscope (SEM) for total vesicle percent of the thin section in ImageJ

and vesicle size, shape, and distributions via Fast Object Acquisitions and Measurement System (FOAMS).
- Wrote 3 grants at the University of Idaho for funding to use the SEM and further sample collection at locations in the northwest of USA.
    - Office of Undergraduate Research grant (U Idaho, spring 2019) $1000
    - Office of Undergraduate Research grant (U Idaho, fall 2020) $1000
    - Summer Undergraduate Research Fund (U Idaho, summer 2021) $4000

- Participated in a geologic field mapping event in Hurricane, UT learning to plan, budget, map a location, and use geologic techniques to create useable products.
- Use Leapfrog Geo to create a geologic model of the Bunker Hill Mining Complex in analyzing resources and potential future areas to excavate.

Relevant Courses

- General Chemistry
- Calculus 1 & 2
- Igneous/Metamorphic Petrology
- Sedimentology/Stratigraphy
- Paleontology
- Geodynamics
- Geophysics
- Glaciology
- Statistical Methods
- Geomorphology
- General Physics
- Structural Geology
- Basin Analysis
- Intermediate GIS
- Chemical Hydrology

Jun 2013 – Jun 2018 **US Navy USS Pinckney (DDG-91)**
SONAR Technician Second Class (ESWS)

Overview
Responsible for locating, classifying, and engaging underwater contacts in the defense of the ship and international maritime laws.

Responsibilities

- Collected and reported suspect Sonar contact information with frequent updates
- Trained in maintenance of various Sonar and damage control equipment to maintain ship's survivability and combat effectiveness.
- Attended journeyman school to supervise Sonar team in combat situation and to operate ship's underwater battery systems.
- Qualified and stood as Officer of the Deck in control of the ship while in port for several hours with the responsibility of crew safety and management of movement of personnel, material, and scheduled maintenance onboard.

Extracurricular Activities

- Geology club Vice-President (Aug 2021 – May 2022)
- American Geophysical Union member (2018 – Present)
- Geological Society of America Member (2018 – Present)

Additional Education and Certifications

- A/N SQQ-89 A(V)-15 ACB-09 Journeyman School (2015)
- SONAR Tech. A and C school (2013-2014)