NICOLE CLIZZIE

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EDUCATION

PhD in Geophysics *October 2020 to Present*
Institute of Geophysics & Planetary Physics, Scripps Institution of Oceanography
University of California San Diego

B.S in Geoscience & Applied Mathematics *December 2019*
Boise State University, Boise, ID GPA: 3.72

A.A.S in Dental Assisting *May 2015*
Air University, Maxwell AFB, AL

AWARDS & SCHOLARSHIPS

Tribal Membership Initiative Fellowship *October 2020-Present*
National Science Foundation GeoScholar *August 2018-May 2019*
Navajo Nation Chief Manuelito Scholarship *August 2016-May 2019*
Whitlock Math and Science Scholarship *August 2018-May 2019*
Higher Education Research Council Fellowship *August-December 2018*
Dean's Highest Honors List, Boise State University *August 2015-December 2018*

RESEARCH EXPERIENCE

Scripps Institution of Oceanography *October 2020-Present*
Graduate Student Researcher

- Used several time-varying spherical harmonic models of Global Geomagnetic Field to study the power spectral density of large spatial scales
- Used Radon drift determination and frequency-wavenumber analyses on time-longitude plots of Global Geomagnetic Field models to track zonal and flux lobe motion

Competitive Edge Summer Research *August-September 2020*
Edge Scholar

- Utilized a Global geomagnetic field reconstruction model (CALS10k) to observe spikes and a declining dipole strength over the past 10,000 years

Seismic Attenuation & Site Response Project *September 2019-Present*
Research Intern

- Processed seismic attenuation data for 25 stations in Northern Canadian Cordillera, Yukon by picking frequency ranges with the signal to noise ratio greater than 2 for 332 local earthquakes
- Analyze site response from local earthquakes and noise for 25 station locations

Stanford's Summer Research in Geoscience and Engineering Program *June-August 2019*
SURGE Scholar

- Modeled strain rate caused by a vehicle driving parallel to a fiber optic cable using Flamant-Boussinesq ground motion equation
- Analyzed and modeled strain rate with observed data collected at the Stanford Fiber Seismic Observatory
- Used the strain rate trace to estimate the subsurface Poisson's ratio

Colorado School of Mines Geophysics Field Camp *May-June 2019*
Student

- Intensive field work in Pagosa Springs, Colorado collecting data using a variety of active and passive geophysical methods such as seismic, ground penetrating radar, electromagnetics, resistivity, and gravity
- Led the gravity team to correct 185 gravity measurements for instrument drift, elevation, and terrain. Corrected data was interpolated and inverted to produce two 2-D profiles and a 3-D model.
- CSM field camp class presented an interpretation of Pagosa Springs geological subsurface

Boise State University Geoscience Department *June 2017-April 2019*
Research Assistant

- Located and characterized faults in downtown Salt Lake by inverting reflection and refraction seismic data
- Processed and analyzed seismic data collected from Charleston's 1886 M 7 earthquake zone to describe the site response and ground amplification from shear wave velocity inversions

Society of Exploration Geophysicist Chapter *October 2018-May 2019*
SEG Student Member

- Participated in retrieval of outdated geophones from the Idaho Owyhee Mountains
- Participated in international collaboration to create a Python notebook for the Climate Change for Kids Project
- Helped in collecting ground penetrating radar data to locate lost graves in the Old Idaho Penitentiary

Digital System Processing Project *October-December 2018*
Student Researcher

- Managed and installed equipment to collected infrasound data at two locations during a Boise State Football game
- Filtered and analyzed collected data to find the quantifying frequencies of the fireworks and cannon fires after a touchdown

CONFERENCE PRESENTATIONS

Clizzie, N., Constable, C. (2022), An Assessment of Long-Period Zonal Drift in the Paleomagnetic Field. Modeling, Observing, and Understanding Flows and Magnetic Fields in the Earth's core and in the Sun Workshop at the Isaac Newton Institute for Mathematical Sciences. Cambridge, UK, 28 Nov.- 2 Dec. (Poster)

Clizzie, N., Constable, C. (2021), Spectral Analyses of Paleomagnetic Secular Variation on Centennial to Multi-millennial Timescales. 2021 American Geophysical Union, New Orleans, LA, 13 Dec.- 17 Dec. (Virtual poster)

Clizzie, N., Constable, C. (2021), Investigating the Geodynamo Through Spectral Analyses of Paleomagnetic Models. 2021 Scripps Student Symposium, La Jolla, CA, Sept. 22. (Virtual poster)

Clizzie, N., Constable, C. (2020), Earth's Magnetic Field Over the Past 10,000 Years. 2020 Edge Summer Research Symposium, La Jolla, CA, Sept. 12.

Clizzie, N., Lellouch, A., Biondi, B. (2020), Estimating Subsurface Parameters using Ambient Noise Recorded by Telecommunication Fiber Optic Cables. 2020 Symposium on the Application of Geophysics to Engineering and Environmental Problems, Denver, CO, 29 Mar.- 2 Apr. (Did not attend, COVID-19)

Clizzie, N., Lellouch, A., Biondi, B. (2019), Estimating Subsurface Parameters using Ambient Noise Recorded by Fiber Optic Cables. 2019 SURGE Research Symposium, Stanford University, CA, 15 Aug. (Oral and poster presentation)

Clizzie, N., Liberty, L., St. Clair, J., (2019), Shear-Wave Velocity and Seismic Response Estimates from the Southern Isoseismal Region of the 1886 Charleston Earthquake: Results from a Seismic Land Streamer System. Seismological Society of America, Seattle, WA, 23-26 Apr. (Poster presentation)

Clizzie, N., Mead, J., (2019), Cubic Splines to Estimate Shear-Wave Velocity. Math Department Senior Thesis & Project Poster Session, Boise State University, Boise, ID, 23 Apr. (Poster Presentation)

Clizzie, N., Mead, J., (2019), Cubic Splines to Evaluate Shear-Wave Velocity of the 1886 Charleston Earthquake Region. Boise State University UG Research Conference 2019, Boise State University, Boise, ID, 15 Apr. (Oral Presentation)

WORK EXPERIENCE

Idaho Air National Guard *June 2015-June 2020*
Supervised dental assistants and manage work flow of dental office

Work Study Tutor *August 2017-May 2019*
Tutored veterans in physics, mathematics, chemistry, and geoscience

Active Duty Air Force *July 2009-June 2015*
Assisted in pediatric dentistry, oral surgery, and general dentistry

PROFESSIONAL SERVICE & DEPARTMENT INVOLVEMENT

Geophysics Student Representative *2021-2022*
Fostering a culture of support and community among the geophysics students throughout the year by organizing events

GEM Mentor *2021-2023*
Mentored an undergraduate student at Western Washington University

SIO-ASK Mentor *2021-2023*
Mentored an undergraduate seeking SIO admissions through the application process