

EDUCATION

- **Idaho State University** Pocatello, ID
M.S. Geology; GPA: 4.0 August 2020 - June 2022
Relevant coursework: MATLAB for Earth and Environmental Science, Geovisualization Techniques, Stable Isotopes for Environmental Science, Geochronology & Thermochronology, Tectonics & Sedimentation, Advanced Structural Geology, History & Philosophy of Biology, Geologic Writing Seminar
- **Adrian College** Adrian, MI
B.S. Geology, B.A. Environmental Science, minor Biology; GPA: 3.98 August 2016 - May 2020
Relevant coursework: Geographic Information & Positioning Systems, Contaminated Soil & Groundwater: Assessment and Remediation, Paleoclimatology, Field & Laboratory Methods, Principles of Ecology, Environmental Problems & Solutions, Sedimentology & Stratigraphy, Igneous & Metamorphic Petrology, Paleontology, Mineralogy, Structural Geology
- **Florida State University** Taos, NM
6-week field course; GPA: 4.0 May 2019 - June 2019
Course focused on: mapping bedrock geology, measuring stratigraphic section, and collecting and interpreting gravimetric and magnetic anomaly data

RESEARCH EXPERIENCE

- **M.S. thesis: Quantifying dike longevity in the Columbia River Flood Basalts** July 2020 - June 2022
Idaho State University — Pocatello, ID
 - Used a Bayesian Markov-Chain Monte Carlo inversion to quantify the duration of magma flow through Columbia River Flood Basalt feeder dikes in the Wallowa Mountains, OR. Measured the spatial resetting pattern of low temperature thermochronometers (apatite and zircon (U-Th)/He, apatite and zircon fission track, and biotite Ar/Ar) in dike-adjacent country rock as a proxy for dike longevity.
- **Senior Capstone: Petrographic analysis of andesitic cobbles** Jan 2019 - May 2020
Adrian College — Adrian, MI
 - Attempted to determine provenance of andesitic cobbles collected from western Montana using petrographic analysis. Performed mineral point counts and in-depth rock descriptions to compare unknown cobbles to known andesitic source rocks.
- **Senior Capstone: Plant functional traits in Belize forests** Sept 2019 - May 2020
Adrian College — Adrian, MI
 - Compared specific leaf area between two ecological sites in the Maya Lowlands using a database created during the Belize Ethnobotany Project (1987-1996) in order to assess how land use history may have affected plant adaptations.
- **Summer Internship: Paleoclimatology** Summer 2018
Smithsonian Institution's National Museum of Natural History — Washington, DC
 - Processed sediment samples from IODP Expedition 369, identified foraminifera species to assess paleoecology, and interpreted 18O and 13C signals measured in foraminifera samples to better understand high-paleolatitude climate trends during the Cretaceous period.

WORK & TEACHING EXPERIENCE

- **Field Geologist** January 2024 - present
New Mexico Bureau of Geology and Mineral Resources — Socorro, NM
 - Responsible for geologic field mapping and map production in accordance with New Mexico STATEMAP Program initiatives regarding characterization of water resources, geologic hazards, and energy and mineral resources.
- **Engineering Geology Intern** July 2023 - December 2023
Washington Department of Transportation — Tumwater, WA
 - Current duties include: inspecting geotechnical assets along WSDOT roads; rating landslide and rockfall hazards as part of the WSDOT Unstable Slope Mitigation System; and providing geotechnical support to ongoing construction projects. Additionally, I am responsible for preliminary geotechnical scoping to replace two existing culverts with fish-passable structures. I have also been working with a team of Engineering Geologists and Geotechnical Engineers to develop a conceptual design for a rockfall mitigation project. I have been trained in steep slope access techniques with a rope.
- **Geologic Mapping Assistant** August 2022 - July 2023
Washington Geological Survey — Olympia, WA
 - Worked in a team with field geologists and geophysicists to map glacial and volcanic debris flow deposits in the Harts Lake quadrangle of western WA. Additional duties included entering Dept. of Ecology well logs to the WGS Subsurface Database.

- **Teaching Assistant** August 2020 - May 2022
 Idaho State University — Pocatello, ID
 - *Helped teach ISU's 5-week geology field camp in 2021. Also taught mineralogy, physical geology, and intro geology labs.*
- **Teaching Assistant** August 2018 - May 2020
 Adrian College — Adrian, MI
 - *Helped teach physical geology and paleontology labs*
- **Track & Explore Instructor** May 2018
 Adrian College — Adrian, MI
 - *Developed and taught lesson plans centered around STEM curriculum for elementary through high school aged participants on school field trips to the Michigan International Speedway*
- **Student worker in Biology department** August 2016-May 2018
 Adrian College — Adrian, MI
 - *Cared for plants in greenhouse (watering, repotting, cleaning). Filed plant specimens in herbarium and logged plant taxa in online database*

SCHOLARSHIPS & GRANTS

- **2021** Awards for Geochronology Student Research2 Grant — \$8,696
- **2016-2020** Trustee with Academic Distinction Scholarship — \$20,000/year
- **2016-2020** Music Scholarship — \$5,000/year
- **2019** GSA Field Camp Scholarship — \$2,000

HONORS & AWARDS

- **2022** Outstanding Graduate Researcher Award from Idaho State University Geoscience Department
- **2022** Paul Link Department Culture Award from Idaho State University Geoscience Department
- **2021** Honorable mention for Best Student Lightning Talk at Thermo2021 Conference
- **2020** Outstanding Senior in Geology at Adrian College
- **2016-2020** Dean's List at Adrian College
- **2017** Outstanding Freshman in Biology at Adrian College

PUBLICATIONS

- Contreras, T. A., Goughnour, R. L., and Lau, T. L., 2023, Geologic map of the Harts Lake 7.5-minute quadrangle, Pierce and Thurston Counties, Washington: Washington Division of Geology and Earth Resources Map Series 2023-04, 1 sheet, scale 1:24,000, 16 p. text.
 Link: https://www.dnr.wa.gov/publications/ger_ms2023-04_geol_map_harts_lake_24k.zip
- Goughnour, R. L., 2022, Quantifying Columbia River flood basalt eruption durations using the resetting of low temperature thermochronometers next to dikes [Master's Thesis, Idaho State University]
 Link: <https://etd.iri.isu.edu/ViewSpecimen.aspx?ID=2186>

PRESENTATIONS

- **Poster:** Goughnour R., Murray, K.E., Karlstrom, L., Cox, S., and O'Sullivan, P.B. Intercalibration of thermochronometers and a magnetic geothermometer to quantify the conditions and duration of magma flow through a Columbia River flood basalt dike. Presented at the Geological Society of America Annual Meeting, October 2022, Denver, CO.
 Abstract: <https://gsa.confex.com/gsa/2022AM/meetingapp.cgi/Paper/382616>
- **Poster:** Goughnour R., Murray, K.E., Karlstrom, L., Cox, S., and O'Sullivan, P.B. Quantifying the duration of magma flow through Columbia River Flood Basalt dikes using (U-Th)/He, fission-track, and 40Ar/39Ar thermochronology. Presented at The 17th International Conference on Thermochronology, September 2021, Santa Fe, NM.
 Abstract: <https://agu.confex.com/agu/thermo20/meetingapp.cgi/Paper/792264>
- **Talk:** Goughnour R.L., Huber B. T., MacLeod K.G., Petrizzo M.R., and IODP Expedition 369 Scientific Party. Foraminiferal Paleoeology and Paleotemperature Estimates for the Cenomanian (100-94 Ma) at High Paleolatitudes. Presented at Adrian College Ribbons of Excellence Day, April 2019, Adrian, MI.
- **Poster:** Goughnour R.L., Huber B. T., MacLeod K.G., Petrizzo M.R., and IODP Expedition 369 Scientific Party. High Paleolatitude Cenomanian Planktonic Foraminifera from IODP Expedition 369 Sites Drilled on Mentelle Basin, SE Indian Ocean. Presented at the Geological Society of America Annual Meeting, November 2018, Indianapolis, IN.
 Abstract: <https://gsa.confex.com/gsa/2018AM/webprogram/Paper322195.html>
- **Poster:** Goughnour R.L., Huber B. T., and MacLeod K.G. Foraminiferal paleoecology and paleotemperature estimates for the Cenomanian (100-94 Ma) at high southern latitudes. Presented at the Natural History Research Experience Symposium, August 2018, Washington, DC.

TECHNICAL EXPERIENCE

- **GIS:** ArcMap, ArcPro
- **Other software:** MATLAB, Adobe Illustrator, gINT, RocScience RocFall 2D modeling, Agisoft Metashape, Panotour Pro, MOVE Structural Geology Modeling Software, Excel, Word, Powerpoint
- **Physical skills:** Petrographic microscope, rock crusher and disk mill, Wilfley table density separator, Frantz magnetic separator, heavy liquid separation (MI and TBE), Leica stereoscopic light microscope (for picking and packing minerals)
- **Certifications:** Qualified Subsurface Geotechnical Investigator (3-day Federal Highway Administration course)

ACADEMIC SERVICE & LEADERSHIP

- President of the Theta Alpha Chapter of Sigma Gamma Epsilon Geology Honor's Society - 2018-2019
- President of Geology Club at Adrian College- 2018-2019
- Principal Viola in Adrian College Symphonic Orchestra - 2019

OUTREACH

- 2022– Volunteer for Mt. St. Helens Institute (summit climb with a geologist)
- 2020– Clinton Elementary School science night
- 2018– "Expert Is In" museum outreach at the National Museum of Natural History
- 2018– Undergraduate mentor for two high school interns through the Youth Engagement with Science (YES!) internship at National Museum of Natural History