

Lissie Connors, Ph.D.

Geochemist with expertise in minerals, microanalysis, and numerical modeling
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Education

- Ph.D. Earth Science**, University of Oregon 2025
Dissertation: Microanalytical investigations of magma sources, storage, and ascent at flank cones of Nyiragongo and Nyamulagira Volcanoes, Democratic Republic of the Congo
Research advisor: Paul J. Wallace
- B.S. Geology & Environmental Geosciences**, Lafayette College 2018
Honors in Geology, minor in Environmental Science
Thesis: Apatite as a Monitor of Magmatic Processes at Torfajökull Volcanic Center
Research advisor: Tamara L. Carley

Publications

- Connors, L**, Wallace, PJ, Sims, KWW, (*in prep*), Timescales of Magma Mixing and Ascent at Nyiragongo and Nyamulagira, Democratic Republic of the Congo, *Bulletin of Volcanology*
- Sims KWW, Tedesco D, Phillips EH, Stark GJ, Blichert-Toft J, Scott S, Balagazi C, Wallace PJ, **Connors L**, (*in prep*) Lithospheric controls on continental alkaline volcanism: Lessons from two adjacent, compositionally distinct volcanos, Nyiragongo and Nyamulagira, DR Congo.
- Connors, L**, Wallace, PJ, Sims, KWW, Sublet, DM, Bodnar, RJ, (*in review*), Magma sources, crustal storage depths, and degassing of alkalic, CO₂-rich magmas at Nyiragongo and Nyamulagira Volcanoes, Democratic Republic of the Congo, *Earth and Planetary Science Letters*.
- Connors L**, Carley TL, Fiege A (2020) Apatite as a Monitor of Dynamic Magmatic Evolution at Torfajökull Volcanic Center, Iceland: Chapter 3 In Vetere F. And Fiege A. (Eds): *Dynamic Magma Evolution (AGU Geophysical Monograph)*, John Wiley & Sons.
doi.org/10.1002/9781119521143.Ch3

Research & Professional Experience

- United States Geological Survey, Geology, Geophysics, and Geochemistry Science Center
Physical Scientist (Mineral Resources Program) 2024 – 2025
- University of Oregon, Department of Earth Sciences
Graduate Research Assistant 2019 – 2024
- American Physical Society
Science Communication Intern 2019
- American Geophysical Union
Talent Pool Intern 2018

National Park Service, John Day Fossil Beds National Monument Geoscientist-in-the-park	2018
Lafayette College, Department of Geology & Environmental Geosciences Undergraduate research assistant	2017 – 2018
American Museum of Natural History, Department of Earth & Planetary Sciences NSF REU intern	2017

Grants & Scholarships

University of Oregon Warren DuPre Smith Scholarship (\$1,000) <i>Building computational resources for data-driven petrology</i>	2023
Johnston Scholarship (\$1,000) <i>3D analysis of melt inclusions using X-ray microscopy</i>	2022
Warren DuPre Smith Scholarship (\$1,000) <i>Analysis of vapor bubbles in melt inclusions using Raman spectroscopy</i>	2020
First-year summer research fellowship (\$5,800)	2020
Geological Society of America Lipman Research Award (\$2,000) <i>Assessing magma storage and volatile fluxes in the Nyiragongo Volcanic Field</i>	2020

Awards and Recognitions

University of Oregon Earth Science Department "Good Citizen" Award	2024
Earth Science Department Research Recognition Award	2023
Lafayette College Arthur Montgomery Geology Award	2017

Teaching Experience

University of Oregon Center Department of Earth Sciences Teaching Assistant	2019 – 2024
<ul style="list-style-type: none"> ▪ EARTH 406: Field Studies in Fire & Ice (2-week summer field camp section) ▪ EARTH 332: Introduction to Petrology (taught twice 2022-2024) ▪ EARTH 311: Earth Materials ▪ EARTH 203: The History of Life ▪ EARTH 202: Earth Surface & Environment (online) ▪ EARTH 102: Exploring Earth's Environment ▪ EARTH 101: Exploring Planet Earth 	
Guest lecturer	2023
<ul style="list-style-type: none"> ▪ EARTH331: Mineralogy 	
Sternberg Museum of Natural History at Fort Hays State University Summer camp instructor	2020

- Field volcanology

Lafayette College Department of Geology & Environmental Geosciences

Teaching Assistant

2016 – 2018

- Environmental Geology
- From Fire to Ice: An Introduction to Geology

Research Techniques

Fourier Transform Infrared Spectroscopy (FTIR)
 Electron Microprobe Analysis (EPMA)
 Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS)
 Secondary Ion Mass Spectrometry (SIMS)
 Scanning Electron Microscopy (SEM)
 X-Ray Absorption Near Edge Structure (XANES)
 X-Ray Diffraction (XRD)
 X-Ray Microscopy (XRM)
 Raman Spectroscopy
 MATLAB, Python, ArcGIS, QGIS
 High-temperature experiments
 Crystal growth
 Acid digestion
 Inclusion and grain mount preparation

Field Experience

Tomichi Creek, Colorado

Water sampling, suspended sediment load collection, instrumentation deployment to assess environmental toxicity at a historical lead-zinc mine

2024

Kilauea, Hawaii

Sampling of the Keanakākoʻi ignimbrite with UO and USGS volcanologists

2024

Zomba Plateau, Malawi

Field trip with Malawi Geological survey to examine fault structures associated with the southern East African Rift System

2023

Auckland Volcanic Field, New Zealand

Field trip with University of Oregon Center for Volcanology to assess hazards associated with distributed volcanic fields

2022

Wallowa Mountains, Oregon

Field campaign collecting Columbia River Basalt dike samples exposed along alpine lakes

2022

High Cascade Mountains, Oregon

Field campaign collecting oriented samples to assess flow structures in subglacial eruptions

2022

Mount St. Helens, Washington

Sample collection along the 1980 pumice plain in collaboration with UO and USGS geologists	2019
Eastern Oregon Sample collection of the Tumalo and Rattlesnake Tuffs	2019
John Day Fossil Bed National Monument Vertebrate fossil prospecting with National Park Service Paleontologists	2018

Professional Activities

GeoPrisms Southern East African Rift System workshop Blantyre, Malawi	2023
IAVCEI Modeling volatile behavior in magmas workshop Rotorua, NZ	2023
GeoPrisms Volatiles, from Source to Surface workshop Bozeman, MT	2022
Talapas Introduction to supercomputing workshop Eugene, OR	2020
Goldschmidt Diffusion modeling workshop Virtual	2020

Service & Leadership

UO Geology Club Workshop leader	2021 – 2024
Graduate Teaching Fellows Federation Vice President of Membership & Data Analytics Natural Sciences Representative	2023 – 2024 2021 – 2022
Unlearning Racism in Geoscience (URGE) Member—Lafayette College Alumni Pod	2021
UO Inclusivity and Gender Diversity in Earth & Atmospheric Sciences (IgDEAS) Volunteer and organizer	2019 – 2024

Invited Presentations

Microscopy and Microanalysis Conference (scheduled July 2025)	2025
Lafayette College (scheduled April 2025)	2025
Lane Community College	2024
Center for Advanced Materials Characterization in Oregon (CAMCOR)	2023
University of Southern California	2019

Conference Presentations

Shea, T, Gallo, RI, Cauley, C, **Connors, L**, Barreau, L, Nizam, N, Mourey, A, Winslow, H, Lerner, A, Cluzel, N, Gansecki, CA, Russo, CJ, Kent, A, Wallace, PJ, Downs, DT, Lynn, KJ, Hazlett, RW, Nadeau, PA (2025). How to differentiate magmas that differentiate indifferently or “Why-oh-why do these Kīlauea magmas all look the same?”. In *Chapman Conference on Caldera-Forming Eruptions at Basaltic Volcanoes: Insights and Puzzles from Kīlauea and Beyond*. AGU.

Connors L, Sublett DM, Wallace PJ, Sims KWW, Bodnar RJ, (2023) Magma facilitates deep volatile transport in the East African Rift: Insights from primitive melt inclusions at flank cones of Nyiragongo and Nyamulagira, Virunga Volcanic Province, *2023 Fall Meeting, American Geophysical Union*, oral, [V41A-03](#)

Sims K, Stark GJ, Phillips E, Blichert-Toft J, Reagan M, Scott SR, Tedesco D, Wallace P, **Connors L** (2023) Lithospheric controls on alkaline volcanism: evidence from Nyiragongo and Nyamulagira volcanoes, Virunga volcanic province, DR Congo, *Geological Society of America Abstracts with Programs*. Vol. 55, doi: [10.1130/abs/2023RM-388091](#)

Connors L, Sublett DM, Wallace PJ, Sims KWW, Bodnar RJ, (2023) Rapid eruption run-up & magma ascent at flank vents of Nyiragongo & Nyamulagira: perspectives from diffusion in olivine, 2023 International Association of Volcanology and Chemistry of the Earth’s Interior (IAVCEI) Scientific Assembly, oral, [9C](#)

Cashman KV, Bussard R, **Connors L**, Harper C (2022) How is Magma Stored Beneath, and Supplied to, Regions of Distributed Volcanism? (Invited), *AGU Chapman Conference on Distributed Volcanism and Distributed Volcanic Hazards*, oral, [I-3](#)

Connors L, Sublett DM, Wallace PJ, Sims KWW, Bodnar RJ (2022) Examining volatiles and pre-eruptive storage histories of Nyiragongo’s most primitive magmas, *Goldschmidt Annual Meeting 2022*, poster, [5fP3](#)

Connors L, Sublett DM, Wallace PJ, Sims KWW, Bodnar RJ (2021) Investigating magma storage histories at flank cones of Nyiragongo and Nyamulagira with olivine-hosted melt inclusions and diffusion chronometry, *2021 Fall Meeting, American Geophysical Union*, poster, [V15D-0112](#)

Connors L, Wallace PJ, Sims KWW, Sublett DM, Bodnar RJ (2020) Tracing the sources of CO₂-rich magmas at Nyiragongo and Nyamulagira using olivine-hosted melt inclusions, *2020 Fall Meeting, American Geophysical Union*, oral (virtual) [V026-02](#)

Tate-Jones KM, Muth M, **Connors L**, Dechert AE, Hunter B, Hampton RL & Sahakian VJ, (2020) The IDEAS Initiative: a department-wide collaboration to promote gender equity in the earth sciences, *Geological Society of America Abstracts with Programs*, Vol. 52, No. 6 (virtual) doi: [10.1130/abs/2020AM-358408](#)

Rein IMT, **Connors L**, Ruger EV, Carley TL, Gross J. (2020) Apatite as an indicator of pre-eruptive destabilization at Icelandic volcanoes, *Geological Society of America Abstracts with Programs*, Vol. 52, No. 6, (virtual) doi: [10.1130/abs/2020AM-358977](#)

Carley TL, **Connors L**, Rein IMT, Ruger E, Gross J, Burger P, (2020) Major and trace element geochemistry of Icelandic apatite: A case study at Torfajökull Volcano, *Goldschmidt Abstracts*, No. 323 (virtual) *Conference moved to a virtual platform due to COVID-19

Rein I, **Connors L**, Ruger E, Carley TL, (2020) Apatite Geochemistry Across the Neovolcanic Zones of Iceland: Establishing a Baseline and Searching for Spatial Significance, *Northeastern Geological Society of America Abstracts with Programs*, poster (Reston, VA) doi: [10.1130/abs/2020SE-344922](#) *Conference events canceled due to COVID-19

Ruger E, Rein I, **Connors L**, Carley TL (2020), Using Icelandic apatites to investigate elevated contents of Rare Earth Elements within Iceland, *Northeastern Geological Society of America Abstracts with Programs*, poster (Reston, VA) doi: [10.1130/abs/2020SE-344930](#) *Conference events canceled due to COVID-19

Connors L., Carley TL, & Fiege A, (2019), Compositional Evolution of Torfajökull Central Volcano, Iceland: Perspectives from the Apatite Record, *Northeastern Geological Society of America Abstracts with Programs*, paper 23-6, oral (Portland, ME) doi: [10.1130/abs/2019NE-328361](#)

Connors L, Carley TL, & Fiege A, (2018) Apatite as a Monitor of Volatile and Trace Element Evolution at Torfajökull Central Volcano, Iceland, *2018 Fall Meeting, American Geophysical Union*, V11F-1313, poster (Washington, D.C.) [V11F-0075C](#)

Connors ME, Fiege A, & Carley TL (2018) Using Apatite to Investigate the Volatile History of Torfajökull Central Volcano, Iceland *Geological Society of America Abstracts with Programs*, Vol 50, No. 6, poster (Indianapolis, IN) doi: [10.1130/abs/2018AM-324303](#)

Connors ME, Tailby ND, & Fiege A (2017) Using High-Resolution Mapping of Crystallized Melt Inclusions to Understand the Evolution of S and I-Type Volcanics from the Lachlan Fold Belt, Australia. *Geological Society of America Abstracts with Programs* Vol. 49, No. 6, paper 255-8, poster (Seattle, WA) doi: [10.1130/abs/2017AM-306207](#)

Connors ME, & Hampton SJ (2017) Relative Age and Formation of a Phreatomagmatic Diatreme in the Mandamus Igneous Complex, New Zealand. *Northeastern Geological Society of America Abstracts with Programs*, Vol. 49, No. 2, paper 26-3, poster (Pittsburgh, PA) doi: [10.1130/abs/2017NE-290385](#)