

CAILEY B. CONDIT – *Curriculum Vitae*
Department of Earth and Space Sciences | University of Washington
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EMPLOYMENT

Assistant Professor	January 2020 - Present
Department of Earth and Space Sciences University of Washington, Seattle, WA	
NSF Postdoctoral Research Fellow	July 2018 – Dec. 2019
Department of Earth, Atmospheric and Planetary Science MIT, Cambridge, MA	
Wiess Postdoctoral Research Fellow	July 2017 – July 2018
Department of Earth, Environmental, and Planetary Sciences Rice University, Houston, TX	

EDUCATION

University of Colorado Boulder Boulder, CO	2011 – 2017
PhD, Department of Geological Sciences	
Middlebury College Middlebury, VT	2007 – 2011
BA, Geology, <i>Cum Laude</i>	

GRANTS and AWARDS since 2017

Pending

2023 NSF EAR Petrology/Geochemistry program: CAREER: Connecting metamorphic reactions, fluid production, and deep slow slip in subduction zones. Sole-PI. Submitted 7/2023

Awarded

2023 NSF-OCE: Collaborative Research: GEO OSE Track 2: Developing CI-enabled collaborative workflows to integrate data for the SZ4D (Subduction Zones in Four Dimensions) community, Co-PI (\$67,021 to UW)

2022 The Royal Society International Exchange: The thermal structure of subduction zones: a new approach combining magnetic and petrologic perspectives. Co-Applicant (£12,000 to C. Nichols and Condit)

2022 NSF EAR Tectonics and Petrology/Geochemistry programs: Collaborative Research: Apatite petrochronology and microtextural analyses: a new tool to directly date subduction processes at the base of the seismogenic zone. Co-PI (\$253,215 to UW)

2021 University of Washington Royalty Research Fund: Searching for Episodic Tremor and Slip in the Exhumed Rock Record. Sole PI (\$39,995 to UW)

2021 NSF-EAR Geophysics and Petrology/Geochemistry Programs: Collaborative Research: Probing feedbacks between thermal structure, petrologic transformation, and rheologic evolution within dynamically evolving subduction zones, Co-PI (\$186,556 to UW)

2020 NSF-EAR Tectonics: Collaborative Research: Blueschist Rheology: Experimental Constraints on Glaucofanite Strength and Deformation Mechanisms, Lead PI (\$294,971 to UW)

2017 NSF-EAR Postdoctoral Research Fellowship. Sole-PI (\$174,000 to Condit)

2017 Wiess Postdoctoral Research Fellowship, Rice University

PUBLICATIONS

Condit lab member; *Student; #Postdoc

Published

Lindquist P. C.*, **Condit, C. B.**, Hoover, W. F.#, Hernández-Uribe D., Guevara V.E., (2023) Metasomatism and slow slip: talc production along the subduction plate interface beneath Guerrero, Mexico. *Geochemistry, Geophysics, Geosystems*.

Hoover, W. F.#, **Condit C.B.**, Lindquist, P. C.*, Moser, A. C.*, Guevara, V.E., (2022) Episodic slow slip hosted by talc-bearing metasomatic rocks: High strain rates and stress amplification in a chemically reacting shear zone. *Geophysical Research Letters* <https://doi.org/10.1029/2022GL101083>

Gutiérrez-Augilar, F., Hernández-Uribe, D., Holder, R. M., **Condit, C.B.**, (2022) The Mw7.1 September 19th Puebla-Morelos (Mexico) earthquake triggered by brucite and antigorite dewatering. *Geophysical Research Letters*

- Condit, C.B.**, French, M.E., (2022) Geologic evidence of lithostatic pore fluid pressure at the base of the subduction seismogenic zone. *Geophysical Research Letters* <https://doi.org/10.1029/2022GL098862>
- Condit, C.B.**, French, M.E., Yeung, L., Y., Lee, C-T. A., Chin, E. J., Hayels, J. (2022) The rheology of metasedimentary rocks at the base of the subduction seismogenic zone. *Geochemistry, Geophysics, Geosystems*. <https://doi.org/10.1029/2021GC010194>
- Holt, A.F., **Condit, C.B.**, (2021) Slab temperature evolution over the lifetime of a subduction zone. *Geochemistry, Geophysics, Geosystems* 22(6). <https://doi.org/10.1029/2020GC009476>
- Condit, C.B.**, Guevara, V.E., Delph, J.R., French, M.E., (2020) Slab dehydration in warm subduction zones at depths of episodic slip and tremor. *Earth and Planetary Science Letters*. 552. <https://doi.org/10.1016/j.epsl.2020.116601>
- French, M.E. and **Condit, C.B.** (2019), Slip partitioning along an idealized subduction plate boundary at deep slow slip conditions. *Earth and Planetary Science Letters*, 528. <https://doi.org/10.1016/j.epsl.2019.115828>
- Johnson, Jena. E., Webb, S.E., **Condit, C.B.**, Beukes, N.J., Fischer, W.W., (2019) Effects of Metamorphism and Metasomatism on Manganese Mineralogy: Examples from the Transvaal Supergroup. *South African Journal of Geology* 122(4), 489–504. <https://doi.org/10.25131/sajg.122.0034>
- Condit, C.B.**, Mahan, K.H., Curtis, K.C.*, Möller, A., (2018) Dating metasomatism: monazite and zircon growth during amphibolite facies albitization. *Minerals Special Issue "Application of Electron Microprobe Methods in Trace Element Analysis and Geochronology"* 8(5). <https://doi.org/10.3390/min8050187>
- Condit, C.B.**, Mahan, K.H. (2018) Fracturing, fluid flow, and shear zone development: relationships between chemical and mechanical processes in Proterozoic mafic dikes from southwestern Montana, USA. *Journal of Metamorphic Geology*, 36(2), 195–223. <https://doi.org/10.1111/jmg.12289>
- Brownlee, S., Schulte-Pelkum, V., Raju, A.*, Mahan, K., **Condit, C.**, Orlandini, O., (2017) Characteristics of deep crustal seismic anisotropy from a compilation of rock elasticity tensors and their expression in receiver functions. *Tectonics*, 36(9), 1835–1857. <https://doi.org/10.1002/2017TC004625>
- Condit, C.B.**, Mahan, K.H., Ault, A.K., Flowers, R.M., (2015). Foreland-directed propagation of high-grade tectonism in the deep roots of a Paleoproterozoic collisional orogen, SW Montana, USA. *Lithosphere* 7(6), 625–645. <https://doi.org/10.1130/L460.1>
- Johnson, Joshua. E.*, West, D.P., **Condit, C.B.**, Mahan, K.H. (2014) Strain localization in the Spanish Creek mylonite, Northern Madison Range, SW Montana. *Rocky Mountain Geology*, 49(2), 91–114. <https://doi.org/10.2113/gsrocky.49.2.91>

In Review/Revision/submitted

- Autrey-Mulligan, S., Bonamici, C., Williams, M., Karlstrom, K., **Condit, C.B.**, (Submitted) Resolving pressure differences across the Grand Canyon: Implications for Proterozoic tectonics *Geology*
- Ott, J.N.**, **Condit, C.B.**, Bernard, R.E., Schulte-Pelkum, V., and Pec, M., (In Revision) Seismic Anisotropy of Mafic Blueschists: constraints from the exhumed rock record. *JGR Solid Earth*
- Mueller, M. A., Licht, A., Moeller, A., **Condit, C.B.**, Fosdick, J.C., Faruk Ocakoglu, Campbell, C., (In Review) An expanded workflow for detrital rutile provenance studies: An application from the Neotethys Orogen in Anatolia. *Geochronology*

Over 45 first or co-authored abstracts at national and international meetings including American Geophysical Union (AGU), Geological Society of America (GSA), Goldschmidt, and European Geophysical Union (EGU).

PAST and PRESENT STUDENTS and POSTDOCS MENTORED

Underlined at UW; *RESESS Intern

PhD Mentees: Sophie Johnson, 2023- present; Nicole Aikin, NSF GRF, 2021-present; Peter Lindquist, 2020-present; Jason Ott, 2020-present;

Postdocs: Dr. William Hoover, NSF PF, 2021-; Eirini Poulaki 2022-; Gabe Epstein 2022 -

Undergraduate Mentees: Angela Bonanno, 2022*; Courtney Pike, 2022*; [Ryan Naff](#), 2022-; [Andrew Guilford](#), 2022-; [Griffin Easthouse](#), 2021-; [Nicole Ferrie](#), 2020-2022; Jae Bridges, 2020*; Keneni Godana, 2020*; Teodora Mitroi, 2019*; Kelly Curtis, 2017-2018; Diana Rattanasith, 2014-2015*.

LEADERSHIP and SERVICE to the SCIENTIFIC COMMUNITY

CRESENT Senior Personnel, Special Interest group Leader: Fluids in Cascadia 2023-present
[SZ4D](#) Steering Committee Member 2022-present
 SZ4D [Faulting and Earthquake Cycles](#) Committee member 2023-present
 SZ4D [GeoArray](#) Committee Member 2022-present
 SZ4D [Building Equity and Capacity in the Geosciences](#) Co-Chair 2022-2023
 GSA Mineralogy, Geochemistry, Petrology, & Volcanology Division's Distinguished Geological Career Award Committee Member 2021- 2023
 Primary Session Convener, GSA Cordilleran Meeting 2023
 Tectonic Processes along Subduction Zone Margins
 GeoPRISMS Deformation at Plate Boundaries Synthesis Workshop Co-Organizer 2020-2022
 Collaborated on proposal for 2.5-day long workshop focused on synthesizing plate boundary structure, deformation and rheology I ran workshop with >60 participants March 2022
 Primary Session Convener, GSA Annual Meeting 2022
 Thermal Structure of Subduction zones: Constraints, Evolution, Consequences
 Session Convener, GSA Annual Meeting 2020
 Subduction Zone Slip Behavior: The Intersection of Deformation and Metamorphism
 Session Convener, AGU Annual Meeting 2019
 Deformation in the Middle and Lower Crust: Integrating Geologic Observations, Experiments, and Theory to Constrain Crustal Rheology; Frontiers of Subduction Zone and Regional Metamorphism: Fluids, Reactions, and Dynamics
 Primary Session Convener, AGU Annual Meeting 2018
 The Varied Roles of Aqueous Fluids near the Subduction Interface
 Member of the NSF-funded [Tectonics-On Ramps](#) working group 2019
 Reviewer: *Earth and Planetary Science Letters*, *Journal of Geophysical Research: Solid Earth*, *Canadian Journal of Earth Science*, *Minerals*, *Science Advances*, *Precambrian Geology*, *Lithos*, *Nature Communications*, *Nature GeoScience*, *Tectonophysics*, *Geology*, *GRL*, *G-Cubed*, NSF-Tectonics, NSF- Petrology and Geochemistry, NSF – Geophysics. NSF – Frontier Research in Earth Science; Panelist: NSF - Tectonics Program

DIVERSITY, EQUITY and INCLUSION

ESS590: DEI in STEM Seminar Instructor of Record Fall 2022
 PetroNet: co-founder of a petrology and high-temperaure geochemistry community built around antiracism, inclusion, equity, and diversity. >80 members Summer 2020 – present
www.petrologynetwork.org
 Unlearning Racism in the Geosciences (URGE) Pod Leader, Young Petrologists and Geochemists 2021
 URGE Pod Member, UW College of the Environment Faculty group 2021
 Architect of UW's ESS Department's Distinguished Lecture Series 2020 – Present
 Lecture series featuring BIPOC and LGBTQ+ early career scientists
[RESESS](#) Satellite co-Organizer | Seattle WA 2022
 RESESS Science mentor for Keneni Godana, Jae Bridges, & Teodora Mitroi 2020-2019
 RESESS Graduate Assistant | UNAVCO | Boulder 2014
 Graduate assistant and mentor for RESESS internship program at UNAVCO. Mentored minoritized students with research while serving as a resource for future opportunities. Fieldtrip Co-Organizer

OUTREACH

Volunteer at Heron's Nest Land Clean-up for the Duwamish Tribe | Seattle WA 2022
 Land clean up and remediation volunteer work with UW PhD students and my research group
 Speaker at UW's [Rockin' Out!](#) virtual speaker series 2020
 Interview subject, Art in America Magazine, [Expert and Artist Discussion](#) 2020
 Science Speaker at Rare Earths | The Mineral and Jam Show | Houston TX 2018

“Rocks and Water in the Deep Earth”
Women in Science and Engineering Group (WiSE) | CU
Grant Writing and Leadership Committees Member

2015 – 2017

INVITED TALKS

Penn State University, Scheduled Oct. 2023
Goldschmidt, *Subduction Zone Metamorphism*, June, 2023
University of Oregon, April 2023
Stanford University, Feb. 2023
University of Nevada Reno, Dec. 2022
Colby College, Nov. 2022
University of Southern California, Oct. 2022
International Joint Workshop on Slow-to-Fast Earthquakes, Keynote Speaker, Nara, Japan, Sept. 2022
Structural Geology and Tectonics Forum, June 2022
EBSD Conference 2022, June 2022
MIT Distinguished Lecture Series, March, 2022
University of Arizona, Feb. 2022
AGU Session: *Connecting the Ins and Outs of Subduction Zones: Experiments, Models, and Observations as Constraints for Inputs, Processes, and Outputs*, Dec. 2021 Utah State University, Nov. 2021
University of California Santa Barbara, May 2021
Caltech Geoclub Seminar, April 2021
EGU Session: *Subduction zone slip styles - interplay of fluids and deformation*, April, 2021
Texas A&M Tectonics and Geophysics Seminar, April 2021
ETH Structure and Tectonics Group Seminar, April, 2021
University of Kentucky G & G Seminar, March, 2021
University of Washington, MGG seminar, March, 2021
Missouri S&T University, Feb. 2021
Montana State University, Feb. 2021
University of Maryland, Feb. 2021
AGU Session: *Multidisciplinary Insights into Tectonic and Metamorphic Processes at Convergent Margins*, Dec. 2020
AGU Session: *Reconciling Estimates of Brittle and Ductile Lithosphere Rheology Across Temporal and Spatial Scales*, Dec. 2020
Goldschmidt: *The Lithospheric Mantle as Earth’s Link between Surface and Deep Processes*, June, 2020
University of Idaho, Department Seminar, Feb. 2020
University of Wisconsin, Weeks Lecture, Nov. 2019
Lamont-Doherty Earth Observatory, Geodynamics Seminar, Nov. 2019
GSA: *Structural Geology in the 21st Century: Rheology of Naturally Deformed Rocks*, Sept. 2019
Scripps Institute of Oceanography, June 2019
MIT COG3 Seminar, April 2019
Skidmore College, Strock Lecture, February 2019
AGU Session: *Flow and Fracture: Mixed Brittle-Viscous Behavior Throughout the Lithosphere*, Dec. 2018
Woods Hole Oceanographic Institute, November 2018
University of Massachusetts, November 2018
Appalachian State University, October 2018
University of Washington, April 2018
Pomona College, March 2018
Texas Tech University, November 2017
Sonoma State University, February 2017
Rice University, January 2017
University of Northern Colorado, October 2016
Middlebury College, September 2014

PROFESSIONAL ORGANIZATIONS

American Geophysical Union since 2009

Geological Society of America since 2009

European Geophysical Union since 2020