Meredith Townsend
Lillis Assistant Professor of Volcanology
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(a) PROFESSIONAL PREPARATION

Institution	Location	Major/Area	Degree (year)
Washington and Lee University	Lexington, VA	Geology; mathematics minor	B.S. (2011)
Stanford University	Stanford, CA	Geology; Ph.D. Minor in Feminist, Gender and Sexuality Studies	Ph.D. (2017)
Brown University	Providence, RI	Earth Science	Postdoctoral researcher (2017-2019)

(b) APPOINTMENTS

- Assistant Professor, University of Oregon (Sept 2019 – present)

(c) PUBLICATIONS

(i) **Townsend M**. and Huber C., *A critical magma chamber size for volcanic eruptions.* Geology (2020) doi: 10.1130/G47045.1

(ii) **Townsend M**., Huber C., Degruyter W. and Bachmann O., *Magma chamber growth during intercaldera periods: insights from thermo-mechanical modeling with applications to Laguna del Maule, Campi Flegrei, Santorini, and Aso.* Geochemistry, Geophysics, Geosystems (2019) doi: 10.1029/2018GC008103

(iii) Huber C., **Townsend M**., Degruyter W. and Bachmann O., *Optimal depth of subvolcanic magma chamber growth controlled by volatiles and crust rheology*. Nature Geoscience (2019) doi: 10.1038/s41561-019-0415-6

(iv) **Townsend M**., *Modeling thermal pressurization around dikes using temperature-dependent hydraulic properties; implications for deformation around intrusions*. Journal of Geophysical Research (2018) doi: 10.1002/2017JB014455

(v) Pollard D.D. and **Townsend M**., *Fluid-filled fractures in Earth's lithosphere: gravitational loading, interpenetration, and stable height of dikes and veins*. Journal of Structural Geology (2018) doi: 10.1016/j.jsg.2017.11.007

(vi) **Townsend M**., Pollard D.D. and Smith R.P., *Mechanical models for dikes: a third school of thought*. Tectonophysics, vol. 703-704, pp 98-118 (2017) doi: 10.1016/j.tecto.2017.03.008

(vii) **Townsend M**., Johnson K., Culha C. and Pollard D.D., *Jointing around Magmatic*

Dikes as a Precursor to the Development of Volcanic Plugs. Bulletin of Volcanology, vol.77:92 (2015) doi: 10.1007/s00445-015-0978-z

(d) ADVISING

Primary adviser:

- Ana Colón (2nd year PhD), constraining ice-magma interactions during subglacial eruptions using field work in the Oregon Cascades and thermal modeling
- Gui Aksit (2nd year PhD), determining magma pathways beneath stratovolcanoes using field work in Colorado and mechanical modeling
- Kathryn Scholz (1st year PhD), understanding the role of magmatic CO_2 on volcanic eruption frequency using numerical modeling

PhD Committee member: Nate Klema, Monse Cascante Matamoros, Amanda Peng, Paul Regensburger, Kathy Trafton, PJ Zrelak, Rebecca Bussard, Sydney Dybing, Annika Dechert, Avigyan Chatterjee, (*all PhD students at University of Oregon*)

Undergraduate research adviser: Catherine O'Hara (*Honors College thesis adviser, University of Oregon*), Kathryn Scholz (*Brown University*), Solana Huang (*Brown University*), Kevin Trinh (*Brown University*), and Cansu Culha (*Stanford*)

(e) TEACHING

University of Oregon: Mechanical Earth (GEOL 455/555), Mapping the Earth (GEOL 410/510)

Previous instruction: Physical Volcanology field course in Greece (Brown University, 2019); Regional Geology of Greece (Washington and Lee University, 2015), Teaching Assistant for Structural Geology/Rock Mechanics (Stanford 2011, 2012), Planetary Origins and Dynamics (Stanford 2011), and Historical Geology (Stanford 2013)

(f) SERVICE TO SCIENTIFIC COMMUNITY & SYNERGISTIC ACTIVITIES

Reviewer: *National Science Foundation (NSF), Nature Geoscience, Scientific Reports, Earth and Planetary Science Letters, Journal of Geophysical Research Solid Earth, Journal of Geophysical Research Planets, Journal of Volcanological and Geothermal Research, Geophysical Research Letters, Geochemistry Geophysics Geosystems, Geophysical Journal International, Geological Society of London, GSA Today, Journal of Structural Geology, Volcanica*

Invited Talks: Geological Society of America Annual Meeting (2020), American Geophysical Union Annual Meeting (2017 & 2019), International Union of Geodesy and Geophysics (2019), Cascade Volcano Observatory (2020), University of Nevada (2020), University of Washington (2019), University of Wisconsin (2019), Portland State University (2019), University of Maryland (2018), Wesleyan University (2018), Lamont-Doherty Earth Observatory (2018),

Cornell University (2018), University of Rhode Island (2018), US Geological Survey Menlo Park (2016)

Conference Session Chair: American Geophysical Union (AGU) Annual Meeting: "Chemistry, Mechanics, Geophysics and Timescales of Magmatic Processes" (2018, 2019, 2020), International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI 2021) "Chemistry, Mechanics, Geophysics and Timescales of Magmatic Processes"

Education Outreach:

- Science Teaching and Education Program: 4th grade earth science programming and curricular development for Vartan Elementary School in Providence, Rhode Island (2017-2018)
- Assistant Director of *Geokids* program at Stanford (2013 – 2014)

Awards and other activities:

- PhD Minor in Feminist, Gender, and Sexuality Studies from Stanford University; conducted original research on gendered motivations for educational and occupational choices in geoscience (completed 2017)
- DARE Doctoral Fellowship ("Diversifying Academia, Recruiting Excellence") – Stanford (2014-2016)
- Vice Provost for Graduate Education Feminist-Scholar Award – Stanford (2014)
- President of Women in Earth Sciences at Stanford (2014-2016)