

Professional Experience

- **Professor of Earth Sciences** 2023–Present
University of Oregon, Eugene, OR
- **Associate Professor of Earth Sciences** 2014-2023
University of Oregon, Eugene, OR
- **Assistant Professor of Geological Sciences** 2006-2014
University of Oregon, Eugene, OR
- **Research Associate of Geological Sciences** 1999-2006
University of Oregon, Eugene, OR
- **Carnegie Postdoctoral Fellow** 1997-2000
Carnegie Institution of Washington DC

Education

- **Ph.D. in Marine Geophysics**
Massachusetts Institute of Technology / Woods Hole Oceanographic Institution, MA
1991–1996
Thesis: “The Influence of Magma Supply and Eruptive Processes on Axial Morphology, Crustal Construction, and Magma Chambers at Mid-Ocean Ridges”; Advisor: Robert S. Detrick
- **B.Sc. magna cum laude, Physics & Astronomy**
Trinity College, University of Toronto, Canada
1986–1990

Research Interests

- Magma transport from Earth’s mantle to the surface at volcanoes
- Mantle plume and ocean ridge interactions
- Structures controlling rupture segmentation at subduction zones
- Seismic imaging and high-performance computing for geophysical data analysis

Awards and Honors

- **Fund for Faculty Excellence Award**, University of Oregon (2021) – \$20,000

Key Research Projects and Expeditions

- **2023 & 2024:** Chief Scientist, R.V. *Marcus G. Langseth* & R.V. *Sally Ride*
Seismic imaging of the Galápagos mantle plume interaction with the Western Galápagos Spreading Center.
- **2021:** Co-Lead, Cascadia2021
Deployed 755 nodal seismometers to study the Cascadia Subduction Zone.
- **2015:** Chief Scientist, R.V. *Marcus G. Langseth*
Seismic study of magma plumbing at Santorini Volcano.

Grants and Funding (Selected)

- **2024–2029: AMORGOS** (France, PRC Collaborative Research)
International collaborator, seismic and tsunami risk analysis in the Eastern Mediterranean.
- **2024–2029: HYDROMOX** (United Kingdom, NERC: Pushing the Frontiers of Environmental)
International project partner, hydrothermal controls on caldera explosivity at Santorini volcano.
- **2023–2028: CRESCENT** (NSF Center for Innovation and Community Engagement in Solid Earth Geohazards)
Senior Personnel, \$14.9M, Cascadia Region Earthquake Science Center.
- **2020–2026: marine IGUANA** (NSF study of Galápagos plume-ridge interaction)
Principal Investigator, \$540k, an open access seafloor seismic imaging experiment.
- **2020–2025: AMORGOS** (France, Campagne de Recherche Scientifique)
International collaborator, study of the 1956 Mw 7.7 Amorgos earthquake and tsunami source.
- **2015-2019 & 2020–2025: PROTEUS** (NSF study of a recharging crustal magma plumbing system)
Principal Investigator, \$800k, seismic study of the structure of Santorini arc volcano.

Recent Professional Service

- Associate Editor, *Journal of Geophysical Research – Solid Earth* (2023–2026)
- International Science Advisory Board Member, *Ocean Networks Canada* (2022–Present)
- Guest Editor, *Seismica Special Issue* (2023–2025)
- Member of UNOLS Operations Committee for the Ocean Bottom Seismic Instrument Center (2019-2024)

Languages

- Dutch, English, French, German, Greek, Spanish

Publications

* student first author for whom I am primary mentor

- *Ashraf, A., E.E.E. Hooft; D.R. Toomey, A. Tréhu, S. Nolan, E. Wirth, K. Ward, A high-resolution 3-D P-wave velocity structure of the south-central Cascadia subduction zone from wide-angle shore-crossing seismic refraction data, *in revision for Journal of Geophysical Research*, 2024.
- Paraskevas M., D. Paradissis, **E. Hooft**, P. Nomikou, Spatiotemporal gravity changes at the Santorini Volcanic complex and their interpretation, *Quaternary Science Advances*, 13, 100140, doi:10.1016/j.qsa.2023.100140, 2024.
- Karstens J., J. Preine, G. J. Crutchley, S. Kutterolf, W. van de Bilt, **E. Hooft**, T.H. Druitt, Florian Schmid, Jan Magne Cederstrøm, Christian Hübscher, Paraskevi Nomikou, Steven Carey, Michel Kühn, Judith Elger, Christian Berndt, Revised Minoan eruption volume as benchmark for large volcanic eruptions, *Nature Communications*, doi: 10.1038/s41467-023-38176-3, 2023.
- Gilchrist J., A.M. Jellinek, **E.E.E. Hooft**, S. Wanket, Submarine terraced deposits linked to periodic column collapse during explosive caldera-forming eruptions, *Nature Geoscience*, doi: 10.1038/s41561-023-01160-z, 2023.
- Dufek J., K. Cashman, **E. Hooft**, P. Bedrosian, The nature of active magma reservoirs and storage underneath Cascade volcanoes, *Elements*, doi:10.2138/gselements.18.4.239, 2022.

- M. Paulatto, **E.E. E. Hooft**, K. Chrapkiewicz, B. Heath, D.R. Toomey, J.V. Morgan, Advances in seismic imaging of magma and crystal mush, *Frontiers in Earth Sciences*, 10:970131, doi: 10.3389/feart.2022.970131, 2022.
- Chatzis N., C. Papazachos, N. Theodulidis, P. Hatzidimitriou, G. Vougioukalakis, M. Paulatto, B. Heath, **E. Hooft**, D. Toomey, M. Anthymidis, Ch. Ventouzi, Metamorphic bedrock geometry of Santorini using HVSR information and geophysical modeling of ambient noise and active-source surface-wave data, *Journal of Volcanology and Geothermal Research*, doi:10.1016/j.jvolgeores.2022.107692, 2022.
- Chrapkiewicz K., M. Paulatto, B.A. Heath, **E. Hooft**, P. Nomikou, C.B. Papazachos, F. Schmid, D.R. Toomey, M.R. Warner, J.V. Morgan, Magma chamber detected beneath an arc volcano with high-resolution velocity images, *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2022GC010475, 2022.
- Schmid, F., G. Petersen, **E. Hooft**, M. Paulatto, K. Chrapkiewicz, M. Hensch, T. Dahm, Heralds of a future eruption? Swarms of microseismicity beneath the submarine Kolumbo volcano indicate opening of near-vertical fractures exploited by ascending melts, *Geochemistry, Geophysics, Geosystems*, 23, e2022GC010420, doi.org:10.1029/2022GC010420, 2022.
- *Heath, B.A., **E. Hooft**, D.R. Toomey, M. Paulatto, C.B. Papazachos, P. Nomikou, J. Morgan, Relationship between active faulting/fracturing and magmatism around Santorini: Seismic anisotropy from an active source tomography experiment, *Journal of Geophysical Research*, doi: 10.1029/2021JB021898, 2021.
- Huff A.E., P. Nomikou, L.A. Thompson, **E. Hooft**, I. Walker, Applying planetary mapping methods to submarine environments: onshore-offshore geomorphology of the Christiana-Santorini-Kolumbo volcanic group, Greece, *Journal of Maps*, doi:10.1080/17445647.2021.1880980, 2021.
- Mayer, J., V. Sahakian, **E. Hooft**, F. Toomey, R. Durairajan, On the resilience of internet infrastructures in Pacific Northwest to earthquakes, paper #44, *Passive and Active Measurement Conference*, 247-265, doi: 10.1007/978-3-030-72582-2_15, 2021.
- Paraskevas, M., D. Paradissis, R. Konstantinos, P. Nomikou, **E. Hooft**, K. Bejelou, Gravity observations on Santorini island (Greece): Historical and recent campaigns, *Contributions to Geophysics and Geodesy*, doi:10.31577/congeo.2021.51.1.1, 2021.
- Bodmer, M., D. Toomey, B. VanderBeek, **E. Hooft**, J.S. Byrnes, Body wave tomography of the Cascadia subduction zone and Juan de Fuca plate system: Identifying challenges and solutions for shore-crossing data, *Geochem. Geophys. Geosyst*, doi: 10.1029/2020GC009316, 2020.
- *McVey, B.G., **E.E.E. Hooft**, B.A. Heath, D.R. Toomey, M. Paulatto, J.V. Morgan, P. Nomikou, C.B. Papazachos, Magma accumulation beneath Santorini volcano from P-wave tomography, *Geology*, doi:10.1130/G47127.1, 2020.
- Paulatto, M., M. Moorkamp, S. Hautmann, **E. Hooft**, J. V. Morgan, R.S.J. Sparks, Vertically extensive magma reservoir revealed from joint inversion and quantitative interpretation of seismic and gravity data, *Journal of Geophysical Research*, doi: 10.1029/2019JB018476, 2019.
- *Heath, B.A., **E. E. E. Hooft**, D.R. Toomey, C.B. Papazachos, P. Nomikou, M. Paulatto, J.V. Morgan, M.R. Warner, Tectonism and its relation to magmatism around Santorini volcano from upper crustal P-wave velocity, *Journal of Geophysical Research*, JGRB53679, doi: 10.1029/2019JB017699, 2019.
- **Hooft, E. E. E.**, B.A. Heath, D.R. Toomey, M. Paulatto, C.B. Papazachos, P. Nomikou, J.V. Morgan, M.R. Warner, Seismic imaging of Santorini: Subsurface constraints on caldera collapse and present-day magma recharge. *Earth and Planetary Science Letters*, 514, 48–61, doi:10.1016/j.epsl.2019.02.033, 2019.
- *Arnoux, G.M., D.R. Toomey, **E.E.E. Hooft**, W.S.D. Wilcock, Seismic imaging and physical properties of the Endeavour segment: Evidence that skew between mantle and crustal magmatic systems governs spreading center processes, *Geochem. Geophys. Geosyst.*, doi: 10.1029/2018GC007978, 2019.

- *Kim, E., D.R. Toomey, **E.E.E. Hooft**, W.S.D. Wilcock, R.T. Weekly, S-M. Lee, YH. Kim, Upper crustal V_p/V_s ratios at the Endeavour segment, Juan de Fuca Ridge, from joint inversion of P and S travel times: Implications for hydrothermal circulation, *Geochem. Geophys. Geosyst.*, doi: 10.1029/2018GC007921, 2019.
- *Bodmer, M., D.R. Toomey, **E.E.E. Hooft**, B. Schmandt, Buoyant Asthenosphere Beneath Cascadia Influences Megathrust Segmentation, *Geophys. Res. Lett.*, doi: 10.1029/2018GL078700, 2018.
- *Heath, B. A., **E. E. E. Hooft**, and D. R. Toomey, Autocorrelation of the seismic wavefield at Newberry Volcano: Reflections from the magmatic and geothermal systems, *Geophys. Res. Lett.*, doi: 10.1002/2017GL076706, 2018.
- *Byrnes, J.S., D.R. Toomey, **E.E.E. Hooft**, J. Nabalek, J.M. Braunmiller, Mantle dynamics beneath the discrete and diffuse plate boundaries of the Juan de Fuca plate: Results from Cascadia Initiative body wave tomography, *Geochem. Geophys. Geosyst.*, doi: 10.1002/2017GC006980, 2017.
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- *Arnoux, G.M., D.R. Toomey, **E.E.E. Hooft**, W.S.D. Wilcock, J. Morgan, M. Warner, and B. P. VanderBeek, Seismic evidence that black smoker heat flux is influenced by localized magma replenishment and associated increases in crustal permeability, *Geophys. Res. Lett.*, 44, doi:10.1002/2016GL071990, 2017.
- *VanderBeek, B., D.R. Toomey, **E.E.E. Hooft**, W.S.D. Wilcock, Segmentation of mid-ocean ridges attributed to oblique mantle divergence, *Nature GeoSciences*, 9, doi:10.1038/NGEO2745, 2016.
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- *Byrnes, J.S., **E.E.E. Hooft**, D.R. Toomey, D.R. Villagómez, D.M. Geist, S.C. Solomon, An upper mantle seismic discontinuity beneath the Galápagos Archipelago and its implications for studies of the lithosphere-asthenosphere boundary, *Geochemistry, Geophysics, Geosystems*, doi: 10.1003/2014Gc005694, 2015.
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- Weekly, R.T., W.S.D. Wilcock, D.R. Toomey, **E.E.E. Hooft**, E. Kim, Upper crustal seismic structure of the Endeavour Segment, Juan de Fuca Ridge from travel time tomography: Implications for oceanic crustal accretion, *Geochem. Geophys. Geosyst*, doi:10.1002/2013GC005159, 2014.
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- *Beachly M., **E.E.E. Hooft**, D. Toomey, G. Waite, Upper crustal structure of Newberry Volcano from P-wave tomography and finite difference waveform modeling, *Journal of Geophysical Research*, 117, B10311, doi:10.1029/2012JB009458, 2012.
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- *Villagómez D.R., D.R. Toomey, **E.E.E. Hooft**, S.C. Solomon, Crustal structure beneath the Galápagos Archipelago from ambient noise tomography and its implications for plume-lithosphere interactions, *Journal of Geophysical Research*, 116, B04310, doi:10.1029/2010JB007764, 2011.
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- Toomey, D.R. and **E.E.E. Hooft**, Mantle upwelling, magmatic differentiation, and the meaning of axial depth at fast-spreading ridges, *Geology*, 36, 679–682, doi:10.1130/G24834A.1, 2008.
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- **Hooft, E.E.E.**, B. Brandsdóttir, R. Mjelde, H. Shimamura, and Y. Murai, Asymmetric Plume-Ridge Interaction Around Iceland: The Kolbeinsey Ridge Seismic Experiment, *Geochemistry, Geophysics, Geosystems*, 7, Q05015, doi:10.1029/2005GC001123, 2006.
- *Fontaine, F., **E.E.E. Hooft**, P. Burkett, D.R. Toomey, S.C. Solomon, and P.G. Silver, Shear-wave Splitting Beneath the Galápagos Archipelago, *Geophysical Research Letters*, 32, doi:10.1029/2005GL024014, 2005.
- **Hooft E.E.E.**, D.R. Toomey, and S.C. Solomon, Anomalous Thin Transition Zone Beneath the Galápagos Hotspot, *Earth and Planetary Science Letters*, 216, 55–64, 2003.
- **Hooft, E.E.E.**, R.S. Detrick, D.R. Toomey, J.A. Collins, and J. Lin, Crustal Thickness and Structure along the Axial Valley of Three Contrasting Spreading Segments of the Mid-Atlantic Ridge, 33.5°–35°N, *Journal of Geophysical Research*, 105, 8205–8226, 2000.
- **Hooft, E.E.E.**, R.S. Detrick, and G.M. Kent, Seismic Structure and Indicators of Magma Budget along the Southern East Pacific Rise, *Journal of Geophysical Research*, 102, 27,319–27,340, 1997.
- Canales, J.P., J.J. Dañobeitia, R.S. Detrick, **E.E.E. Hooft**, R. Bartolomé, and D. Naar, Variations in Axial Morphology along the Galápagos Spreading Center and the Influence of the Galápagos Hotspot, *Journal of Geophysical Research*, 102, 27,341–27,354, 1997.

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- **Hooft, E.E.E.**, H. Schouten, and R.S. Detrick, Constraining Crustal Emplacement Processes from the Variation of Seismic Layer 2A Thickness at the East Pacific Rise, *Earth and Planetary Science Letters*, 142, 289-309, 1996.
- **Hooft, E.E.E.**, and R.S. Detrick, The Relationship between Axial Morphology, Crustal Thickness, and Mantle Temperatures along the Juan de Fuca and Gorda Ridges, *Journal of Geophysical Research*, 100, 22,499-22,508, 1995.
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- **Hooft, E.E.**, and R.S. Detrick, The Role of Density in the Accumulation of Basaltic Melts at Mid-Ocean Ridges, *Geophysical Research Letters*, 20, 423-426, 1993.
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