

Matthew G. Jackson

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Education

Ph.D., Massachusetts Institute of Technology – Woods Hole Oceanographic Institution ‘Joint Program’.
Advisor: Dr. Stan Hart. Thesis committee: Stan Hart, Fred Frey, Erik Hauri, Peter Keleman, Mark Kurz, Nobu Shimizu, Ken Sims. **Degree awarded February 2008**

B.S., Geology, 2001, Yale University. Graduated *cum laude*
Advisor: Dr. Philip D. Ihering

Positions

Professor, Department of Earth Science, UC Santa Barbara. July 2017 – Present
Associate Professor, Department of Earth Science, UC Santa Barbara. July 2013 – June 2017.
Assistant Professor, Department of Earth Sciences, Boston University. January 2010 – June 2013.
Post-doctoral Fellow, Department of Terrestrial Magnetism, Carnegie Institution of Washington.
Post-doctoral mentors: Richard Carlson, Steven Shirey, Erik Hauri. 2008 – 2009
Post-doctoral Investigator, Woods Hole Oceanographic Institution. Spring 2008

Leadership, Awards, Honors

- Secretary, Volcanology Geology & Geochemistry Section, AGU, 2019 – 2021
- Fellow, American Geophysical Union, 2015
- Macelwane Medal–American Geophysical Union, 2015
- Kuno Award–American Geophysical Union (Volcanology, Geochemistry, Petrology), 2014
- Clarke Medal–Geochemical Society, 2014
- Awarded “Most Inspirational Teacher” by Graduate Students of Dept. of Earth Sci., 2016 and 2017
- Editors’ Citation for Excellence in Refereeing for Geochemistry, Geophysics, Geosystems, 2016
- WHOI Ruth and Paul Fye award: Graduate Student Best Paper, June 2010
- Carnegie Postdoctoral Fellowship, Carnegie Institution of Washington, 2008 – 2009
- Caltech O.K. Earl Postdoctoral Fellowship (declined)
- AGU Outstanding Student Paper Award, December 2005
- NSF Graduate Research Fellowship, September 2002-August 2005
- Fulbright Grant for geological study in Iceland, 2001-2002
- Yale Geology & Geophysics Dept. Belknap Prize for achievement in the geology major, May 2000
- Yale Geology & Geophysics Dept. Hammer Prize for Senior Thesis Presentation, May 2000

Peer-reviewed manuscripts (*Jackson grad student, **Jackson u-grad, ***Jackson post-doc)

Summary of publications: *Nature* ($N = 10$ publications), *Science* ($N = 3$), *PNAS* ($N = 2$ reviewed + 1 unreviewed Commentary), *AGU Advances* ($N = 3$), *Nature Geoscience* ($N = 4$), *Nature Communications* ($N = 2$), *Nature Rev. Earth & Environment* ($N = 1$), *Geology* ($N = 7$), and *EPSL* ($N = 23$).

Manuscripts Published

2025

127. Macdonald, F., E. Renger, A. Tasistro-Hart, B. Byerly, **M.G. Jackson**, K. Bergmann, T. Horner, P. Crockford (2025). Mantle-like Sr isotopes in a Sturtian cap carbonate in Oman. *Geology*.
126. Harðardóttir, S.*, **M.G. Jackson** (2024). High $^3\text{He}/^4\text{He}$ plumes are hotter and melt more: evidence from the petrology and geochemistry of ocean island basalts. *Earth Planet. Sci. Lett.*, submitted.
125. FUTURE 2024 PI-team, Bruce Appelgate, Brandon Dugan, Nobuhisa Eguchi, Daniel Fornari, Tim Freudenthal, Patrick Fulton, Sean Kelley, Susan Q. Lang, Dana Manalang, Alan Mix, Rick Trask, Janine Andrys, Sarah Beethe, Hanna Bridgham, Haley Cabaniss, Sami K. Cargill, Christian W. Conroy, Kassandra Costa, Alysia Cox, Andrew Cross, Deepa Dwyer, Justin Dodd, Jeffrey Donnelly, Valerie Finlayson, Mohammed Hashim, Daniel Heaton, Brittany Hupp, **M.G. Jackson**, Claire Jasper, Hiroko Kitajima, Olga Libman-Roshal, Christopher M. Lowery, Erica Maletic, Ashley N. Marranzino, Beatriz E. Mejía-Mercado, Thomas Morrow, Lucien Nana Yobo, Celeste Pallone, Kurt Panter, Molly Patterson, Ally Peccia, Thomas A. Ronge, Ethan Roth, Alice Staro, Katherine Stelling, Jordan P. Todes, Man-Yin Tsang, Scott T. Wieman, Kevin Konrad, Brendan Reilly, Matthew Schrenk, Maureen Walczak, and Masako Tominaga. The FUTURE of the US marine seafloor and subseafloor sampling capabilities. *AGU Advances* 6, e2024AV001560. 10.1029/2024AV001560
124. Wang, B., F. Moynier, **M.G. Jackson**, J.M.D. Day. Rubidium isotopes reveal crustal recycling into the mantle sources of ocean island basalts. *GCA* 394, 194-204.
<https://doi.org/10.1016/j.gca.2025.02.011>
123. Konter, J.G., V.A. Finlayson, K. Konrad, **M.G. Jackson**, A.A.P. Koppers, P. Wessel, S. Beethe, M. Bizimis, A. Alverson, C. Kelley. Pacific hotspots reveal a Louisville-Ontong Java Nui tectonic link. *Nature* 641, 388-394. <https://doi.org/10.1038/s41586-025-08889-0>
122. Anderson*, O.E., **M.G. Jackson**, J. Dottin III; S. Harðardóttir*, K.T. Koga, G. Seward, J. Cottle, E.F. Rose-Koga, N. Gauer-Pasqualon (2025). Volatiles in olivine-hosted melt inclusions from a rejuvenated O'ahu tephra: Degree of melting controls the primary melt CO_2 content—and extent of H_2O degassing—of OIB. *Chem. Geol.* 678. <https://doi.org/10.1016/j.chemgeo.2024.122604>
121. White, W., **M.G. Jackson**, S. Harðardóttir* (2025). Insights into mantle plume geochemistry from machine learning. *Geochem., Geophys., Geosyst.* <https://doi.org/10.1029/2024GC011870>
120. Harðardóttir*, S., **M.G. Jackson** (2025). A new geochemical database for ocean island basalts: Inferring an OIB mantle source from unevenly sampled oceanic hotspots. *Chem. Geo. Accepted*. <https://doi.org/10.1016/j.chemgeo.2024.122505>

2024

119. **Jackson, M.G.**, V. Finlayson, B. Steinberger, K. Konrad (2024). When a Plateau suppresses a Plume: Disappearance of the Samoan plume under the Ontong Java Plateau. *AGU Advances* 5, e2023AV001079. <https://doi.org/10.1029/2023AV001079>

118. Marshall, E.M., S.A. Halldórsson, L. Tian, **M.G. Jackson**, F. Jenner, A. Stefansson (2024). The effect of diffusion on lithium isotope ratios in Icelandic basalts. *Chemical Geology* 662, 122206. <https://doi.org/10.1016/j.chemgeo.2024.122206>
117. Soderman, C., S. Matthews, O. Shorttle, **M.G. Jackson**, J.M.D. Day, V. Kamenetsky, H.M. Williams (2024). Global oceanic basalt sources and processes viewed through combined Fe and Mg stable isotopes. *Earth Planet. Sci. Lett.* 638, 118749. <https://doi.org/10.1016/j.epsl.2024.118749>
116. Anderson, O.E.*, **M.G. Jackson**, A.S. Pamukçu, E.F. Rose-Koga, V. Le Roux, F. Klein, K.T. Koga, G.A. Gaetani, A.A. Price* (2024). Extensive H₂O degassing in deeply erupted submarine glasses inferred from Samoan melt inclusions: The EM2 mantle source is damp, not dry. *Chem. Geol.* 651, 121979. doi.org/10.1016/j.chemgeo.2024.121979
115. Willhite, L.N., R. Arevalo, P. Piccoli, J.C. Lassiter, D. Rand, **M.G. Jackson**, J.M.D. Day, R.W. Nicklas, M. Locmelis, T.J. Ireland, I.S. Puchtel (2024). Oxygen fugacity of global ocean island basalts. *Geochem. Geophys. Geosyst.* 25, e2023GC011249. <https://doi.org/10.1029/2023GC011249>
114. Konrad, K., A. Balbas, V. Finlayson, **M.G. Jackson**, J. Konter, A.A.P. Koppers, A. Price*, B. Steinberger (2024). Four Distinct Pulses of Volcanism Built the Melanesian Border Plateau: Implications for Oceanic Mid-plate Superstructure Formation. *Earth Planet. Sci. Lett.* 626, 118549. <https://doi.org/10.1016/j.epsl.2023.118549>
113. Konrad, K., **M.G. Jackson**, B. Steinberger, A. Koppers, A. Balbas, V. Finlayson, J. Konter, A. Price* (2024). Toroidal Flow Around the Tonga Slab Moved the Samoan Plume During the Pliocene. *Geology*. <https://doi.org/10.1130/G51588.1>

2023

112. Walker, R.J., A. Mundl-Petermeier, I.S. Puchtel, R.W. Nicklas, J.L. Hellmann, L.M. Echeverría, K.D. Ludwig, K.R. Bermingham, E. Gazel, C.L. Devitre, **M.G. Jackson**, C. Chauvel (2023). ¹⁸²W and ¹⁸⁷Os constraints on the origin of siderophile isotopic heterogeneity in the mantle *Geochem. Cosmochim. Acta.* 363, 15-39. <https://doi.org/10.1016/j.gca.2023.11.003>
111. Israel, C., M. Boyet, R. Doucelance, P. Bonnand, B. Dhuime, D. Ionov, H. Moreira, **M.G. Jackson**, A.V. Golovin (2023). First Ce-Nd isotope measurements of middle and lower continental crust samples support massive lower crust recycling over Earth's history. *Lithos* 460, 107369. <https://doi.org/10.1016/j.lithos.2023.107369>
110. Deng, Z., M. Schiller, **M.G. Jackson**, M.-A. Millet, L. Pan, K. Nikolajsen, N. Saji, D. Huang, M. Bizzarro. Earth's evolving geodynamic regime recorded by titanium isotopes. *Nature* 621, 100-104. doi.org/10.1038/s41586-023-06304-0
109. Wang, B., F. Moynier, **M.G. Jackson**, F. Huang, X. Hu, S.A. Halldórsson, W. Dai, G. Devos. Rubidium isotopic fractionation during magmatic processes and the composition of the bulk silicate Earth. *Geochem. Cosmochim. Acta.* <https://doi.org/10.1016/j.gca.2023.05.021>
108. Archer, G.J., G. Budde, E. Worsham, A. Stracke, **M.G. Jackson**, T. Kleine (2023). Origin of ¹⁸²W anomalies in ocean island basalts. *Geochem. Geophys. Geosyst.* 24, e2022GC010688. <https://doi.org/10.1029/2022GC010688>
107. Herrera, S., W.W. Chadwick, **M.G. Jackson**, J.G. Konter, L. McCartin, N. Pittoors, E. Bushta, S. Merle (2023). From basalt to biosphere: Early non-vent community succession on the erupting Vailulu'u deep seamount. *Front. Mar. Sci.* 10:1110062. doi: 10.3389/fmars.2023.1110062

2022

106. Gill, J., E. Todd, K. Hoernle, F. Hauff, A. Price*, **M.G. Jackson** (2022). Breaking Up is Hard to Do: Magmatism During Oceanic Arc Breakup, Subduction Reversal, and Cessation. *Geochem. Geophys. Geosyst.*, 23, e2022GC010663. <https://doi.org/10.1029/2022GC010663>
105. Bai, R.*, **M.G. Jackson**, F. Huang, F. Moynier, G. Devos, S.A. Halldórsson, L. Lisiecki, H. Yin, Y. Peng, X. Nan (2022). Barium isotopes in ocean island basalts as tracers of mantle processes. *Geochim. Cosmochim. Acta.*, 336, 436-447.
104. **Jackson, M.G.**, F.A. Macdonald (2022). Hemispheric geochemical dichotomy of the mantle is a legacy of austral supercontinent assembly and onset of deep continental crust subduction. *AGU Advances*, 3, e2022AV000664. <https://doi.org/10.1029/2022AV000664>
103. Halldórsson, S., E. Marshall, A. Caracciolo, S. Matthews, E. Bali, M. Rasmussen, E. Ranta, J.G. Robin, G. Gudfinnsson, O. Sigmarsson, J. Maclennan, **M.G. Jackson**, M. Whitehouse, H. Jeon, Q. van der Meer, G. Mibei, M. Kalliokoski, M. Repczynska, R. Rúnarsdóttir, G. Sigurðsson, M. Pfeffer, S. Scott, R. Kjartansdóttir, B. Kleine, C. Oppenheimer, A. Aiuppa, E. Ilyinskaya, M. Bitetto, G. Giudice, A. Stefánsson (2022). Rapid shifting of a deep magmatic source at Fagradalsfjall volcano, Iceland. *Nature*, 609, 529-534. <https://doi.org/10.1038/s41586-022-04981-x>
102. Rasmussen, M.B., S.A. Halldórsson, **M.G. Jackson**, I.N. Bindeman, M.J. Whitehouse (2022). Helium and oxygen isotopic variations in the Iceland plume source controlled by entrainment of recycled oceanic lithosphere. *Earth Planet. Sci. Lett.*, 594, 117691.
101. Harðardóttir*, S., S. Matthews, S.A. Halldórsson, **M.G. Jackson** (2022). Spatial distribution and geochemical characterization of Icelandic mantle end-members: implications for plume geometry and melting processes. *Chem. Geol.*, 604, 120930. <https://doi.org/10.1016/j.chemgeo.2022.120930>
100. Nicklas, R.W., R.K.M. Hahn, L.N. Willhite, **M.G. Jackson**, Z. Vittorio, R. Arevalo, J.M.D. Day (2022). Oxidized mantle sources for HIMU and EM-type ocean island basalts. *Chem. Geol.*, 602, 120901. <https://doi.org/10.1016/j.chemgeo.2022.120901>
99. Price, A.A.*, **M.G. Jackson**, J. Blichert-Toft, K. Konrad, M. Bizimis, A.A.P. Koppers, J.G. Konter, V.A. Finlayson, J.M. Sinton (2022). Distinguishing volcanic contributions to the overlapping Samoan and Cook-Austral hotspot tracks. *J. Pet.*, 63, 1-25. <https://doi.org/10.1093/petrology/egac032>
98. Ranta, E., J. Gunnarsson-Robin, S.A. Halldórsson, S. Ono, G. Izon, **M.G. Jackson**, C.D.J. Reekie, F.E. Jenner, G.H. Guðfinnsson, Ó.P. Jónsson, A. Stefánsson (2022). Ancient and recycled sulfur sampled by the Iceland mantle plume. *Earth Planet. Sci. Lett.*, 584, 117452. <https://doi.org/10.1016/j.epsl.2022.117452>
97. Bao, X., C. Lithgow-Bertelloni, **M.G. Jackson**, B. Romanowicz (2022). On the relative temperatures of Earth's volcanic hotspots and mid-ocean ridges. *Science*, 375, 57-61. DOI: 10.1126/science.abj8944

2021

96. Moynier, F., **M.G. Jackson**, K. Zhang, H. Cai, S. Halldórsson, R. Pik, J. Day, J. Chen (2021). The mercury isotopic composition of Earth's mantle and the use of mass independently fractionated Hg to test for recycled crust. *Geophys. Res. Lett.* **48**. e2021GL094301. <https://doi.org/10.1029/2021GL094301>
95. Gaschnig, R., C. Reinhard, N. Planavsky, X. Wang, D. Asael, **M.G. Jackson** (2021). The impact of primary processes and secondary alteration on the stable isotope composition of ocean island basalts. *Chem. Geol.*, 581, 120416. doi.org/10.1016/j.chemgeo.2021.120416

94. Dottin, J.W. III, J. Labidi, **M.G. Jackson**, J. Farquhar (2021). Sulfur isotope evidence for a geochemical zonation of the Samoan mantle plume. *Geochem. Geophys. Geosyst.* **22**, e2021GC009816. <https://doi.org/10.1029/2021GC009816>
93. Byerly***, B., **M.G. Jackson**, M. Bizimis (2021). Carbonatite versus silicate melt metasomatism impacts grain scale $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$ heterogeneity in Polynesian mantle peridotite xenoliths. *Geochem. Geophys. Geosyst.*, **22**, e2021GC009749. <https://doi.org/10.1029/2021GC009749>
92. Koppers, A.A.P., T.B. Becker, **M.G. Jackson**, K. Konrad, R.D. Muller, B. Romanowicz, B. Steinberger, J. Whittaker (2021). Mantle Plumes and their role in Earth Processes. *Nature Reviews Earth & Environment*. <https://doi.org/10.1038/s43017-021-00168-6>.
91. Anderson, O.E.* , **M.G. Jackson**, E.F. Rose-Koga, J.P. Marske, M.E. Peterson, A.A. Price, B.L. Byerly, A.A. Reinhard (2021). Testing the recycled gabbro hypothesis for the origin of "Ghost Plagioclase" melt signatures using $^{87}\text{Sr}/^{86}\text{Sr}$ of individual olivine-hosted melt inclusions from Hawai'i. *Geochem. Geophys. Geosyst.* **22**. <https://doi.org/10.1029/2020GC009260>
90. Adams, J.V.* , F. Spera, **M.G. Jackson** (2021). Trachytic melt inclusions hosted in clinopyroxene offer a glimpse into Samoan EM2-endmember melts. *Geochem. Geophys. Geosyst.* **22**. <https://doi.org/10.1029/2020GC009212>
89. Adams, J.V.* , **M.G. Jackson**, F.J. Spera, A.A. Price, B. Byerly, G. Seward, J.M. Cottle (2021). Extreme isotopic heterogeneity in Samoan clinopyroxenes constrains sediment recycling. *Nature Comm.* **12**. <https://doi.org/10.1038/s41467-021-21416-9>
88. **Jackson, M.G.**, T.W. Becker, B. Steinberger (2021). Spatial characteristics of recycled and primordial reservoirs in the deep mantle. *Geochem. Geophys. Geosyst.* **22**. <https://doi.org/10.1029/2020GC009525>
87. Buff, L.* , **M.G. Jackson**, K. Konrad, J.G. Konter, M. Bizimis, A. Price, E. Rose-Koga, J. Blusztajn, A. Koppers, S. Herrera (2021). "Missing links" for the long-lived Macdonald and Arago hotspots, South Pacific Ocean. *Geology* **49**, 541-544. <https://doi.org/10.1130/G48276.1>
86. Soderman, C., S. Matthews, O. Shorttle, **M.G. Jackson**, S. Ruttor, O. Nebel, S. Turner, C. Beier, M.A. Millet, E. Widom, H.M. Williams (2021). Heavy ^{57}Fe in ocean island basalts: A non-unique signature of processes and source lithologies in the mantle. *Geochim. Cosmochim. Acta* **292**, 309-332. doi.org/10.1016/j.gca.2020.09.033

2020

85. Giuliani, A., **M.G. Jackson**, A. Fitzpayne, H. Dalton (2020). Remnants of early Earth differentiation in the deepest mantle-derived lavas. *PNAS* **118**. doi.org/10.1073/pnas.2015211118
84. **Jackson, M.G.**, J. Blichert-Toft, S.A. Halldórsson, A. Mundl-Petermeier, M. Bizimis, M.D., Kurz, A.A. Price*, S. Harðardóttir*, L.N. Willhite*, K. Breddam, T.W. Becker, R.A. Fischer (2020). Ancient helium and tungsten isotopic signatures preserved in mantle domains least modified by crustal recycling. *PNAS* **117**, 30993-31001
83. Dottin, J.W. III, J. Labidi, **M.G. Jackson**, J. Woodhead, J. Farquhar (2020). Isotopic Evidence for Multiple Recycled Sulfur Reservoirs in the Mangaia Mantle Plume *Geochem. Geophys. Geosyst.* **21**. doi.org/10.1029/2020GC009081
82. Moynier, F., J. Chen, K. Zhang, H. Cai, Z. Wang, **M.G. Jackson**, J. Day (2020). Chondritic mercury isotopic composition of Earth and evidence for evaporative equilibrium degassing during the formation of eucrites. *Earth Planet. Sci. Lett.* **551**. doi.org/10.1016/j.epsl.2020.116544
81. **Jackson, M.G.**, S.A. Halldórsson, A. Price*, M.D. Kurz, J.G. Konter, A.A.P. Koppers, J.M.D. Day (2020). Contrasting old and young volcanism from Aitutaki, Cook Islands: Implications for the origins of the Cook-Austral volcanic chain. *J. Pet.* **61**. doi.org/10.1093/petrology/egaa037.

80. Ashley, A.W., M. Bizimis, A.H. Peslier, **M.G. Jackson**, J. Konter (2020). Metasomatism and hydration of the oceanic lithosphere: A case study of peridotite xenoliths from Samoa. *J. Pet.* **61**. doi.org/10.1093/petrology/egaa028
79. Dottin, J.W. III, J. Labidi, V. Lekic, **M.G. Jackson**, J. Farquhar (2020). Sulfur isotope characterization of primordial and recycled sources feeding the Samoan mantle plume. *Earth Planet. Sci. Lett.* **534**, 116073. doi.org/10.1016/j.epsl.2020.116073
78. Mundl-Petermeier, A., R.J. Walker, R.A. Fischer, V. Lekic, **M.G. Jackson**, M.D. Kurz (2020). Anomalous ^{182}W in high $^3\text{He}/^4\text{He}$ ocean island basalts: fingerprints of Earth's core? *Geochim. Cosmochim. Acta* **271**, 194–211. doi.org/10.1016/j.gca.2019.12.020

2019

77. Snortum, E., J.M.D. Day, **M.G. Jackson** (2019). Pacific lithosphere evolution inferred from Aitutaki mantle xenoliths. *J. Petrology.*, v. 60, 1753–1772. <https://doi.org/10.1093/petrology/egz047>
76. Willhite, L.N.*, **M.G. Jackson**, J. Blichert-Toft, I. Bindeman, M.D. Kurz, S.A. Halldórsson, S. Harðardóttir, E. Gazel, A.A. Price, B.L. Byerly (2019). Hot and heterogeneous high- $^3\text{He}/^4\text{He}$ components: New constraints from proto-Iceland plume lavas from Baffin Island. *Geochim. Geophys. Geosyst.* **20**, 5939-5967. 10.1029/2019GC008654
75. Mundl-Petermeier, A., R.J. Walker, **M.G. Jackson**, J. Blichert-Toft, M.D. Kurz, S.A. Halldórsson (2019). Temporal evolution of primordial tungsten-182 and $^3\text{He}/^4\text{He}$ signatures in the Iceland mantle plume. *Chem. Geol.* **525**, 245-259. doi.org/10.1016/j.chemgeo.2019.07.026
74. Inglis, E., F. Moynier, J. Creech, Z. Deng, J. Day, F.-Z. Teng, M. Bizzarro, **M.G. Jackson**, P. Savage (2019). Isotopic fractionation of zirconium during magmatic differentiation and the stable isotope composition of the silicate Earth. *Geochim. Cosmochim. Acta* **250**, 311-323. doi.org/10.1016/j.gca.2019.02.010
73. Reinhard, A.A.*, **M.G. Jackson**, J. Blusztajn, A.A.P. Koppers, A.R. Simms, J.G. Konter (2019). ‘Petit Spot’ rejuvenated volcanism superimposed on plume-derived Samoan shield volcanoes: Evidence from a 645-m drill core from Tutuila Island, American Samoa. *Geochemistry, Geophysics, Geosystems (G-cubed)* **20**. <https://doi.org/10.1029/2018GC007985>
72. Edwards, M.A.*, **M.G. Jackson**, A.R.C. Kylander-Clark, J. Harvey, G.A. Hagen-Peter, G.G.E. Seward, C.B. Till, J.V. Adams, J.M. Cottle, B.R. Hacker, F.J. Spera (2019). Extreme enriched and heterogeneous $^{87}\text{Sr}/^{86}\text{Sr}$ ratios recorded in magmatic plagioclase from the Samoan hotspot. *Earth Planet. Sci. Lett.* **511**, 190-201. <https://doi.org/10.1016/j.epsl.2019.01.040>
71. Konter, J.G., V.A. Finlayson, J. Engel, **M.G. Jackson**, A.A.P. Koppers, S. Sharma (2019). Shipboard characterization of Tuvalu, Samoa, and Lau dredge samples using Laser-Induced Breakdown Spectroscopy (LIBS). *Appl Spectrosc* **330**. 000370281983079. doi:10.1177/0003702819830793
70. Horton, F., K. Farley, **M.G. Jackson** (2019). Helium distributions in ocean island basalt olivines revealed by X-ray computed tomography and single-grain crushing experiments. *Geochim. Cosmochim. Acta.* **224**, 467-477. doi.org/10.1016/j.gca.2018.10.013

2018

69. **Jackson, M.G.**, T.W. Becker, J.G. Konter (2018). Geochemistry and distribution of recycled domains in the mantle inferred from Nd and Pb isotopes in oceanic hotspots: implications for storage in the large low shear wave velocity provinces (LLSVPs). *Geochim. Geophys. Geosyst.* **19** doi:10.1029/2018GC007552

68. Reinhard, A.A.* , **M.G. Jackson**, J.M. Koornneef, E.F. Rose-Koga, J. Blusztajn, J.G. Konter, K.T. Koga, P.J. Wallace, J. Harvey (2018). Sr and Nd isotopic compositions of individual olivine-hosted melt inclusions from Hawai'i and Samoa: implications for the origin of isotopic heterogeneity in melt inclusions from OIB lavas. *Chem. Geol.* **495**, 36-49. <https://doi.org/10.1016/j.chemgeo.2018.07.034>
67. Finlayson, V., J.G. Konter, K. Konrad, A.A.P. Koppers, **M.G. Jackson**, T.O. Rooney (2018). Sr–Pb–Nd–Hf isotopes and $^{40}\text{Ar}/^{39}\text{Ar}$ ages reveal a Hawaii–Emperor-style bend in the Rurutu hotspot. *Earth Planet. Sci. Lett.* **500**, 168–179. doi.org/10.1016/j.epsl.2018.08.020
66. Putirka, K., Y. Tao, K.R. Hari, M. Perfit, **M.G. Jackson**, R. Arevalo Jr (2018). The mantle source of thermal plumes: trace and minor elements in olivine and major oxides of primitive liquids (and why the olivine compositions don't matter). *American Mineralogist* **103**, 1253-1270. doi.org/10.2138/am-2018-6192
65. Zhang, G.-L., Q. Luo, J. Zhao, **M.G. Jackson**, L.-S. Guo., L.-F. Zhong (2018). Geochemical nature of sub-ridge mantle and opening dynamics of the South China Sea. *Earth Planet. Sci. Lett.* **489**, 145-155. doi.org/10.1016/j.epsl.2018.02.040
64. Konrad, K., A.A.P. Koppers, B. Steinberger, V. Finlayson, J. Konter, **M.G. Jackson** (2018). On the relative motions of long-lived Pacific mantle plumes. *Nature Communications* 9. DOI: [10.1038/s41467-018-03277-x](https://doi.org/10.1038/s41467-018-03277-x)
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Funding

Total NSF funding to Jackson lab *only* (2010-2025): \$3,353,291
Total NSF funding to Jackson lab *and* non-UCSB co-PIs (2010-2025): \$8,104,554

16. Amount: **\$88,000** (award to ICDP-Samoa PI team to host workshop)
Title: “Probing the Lithosphere Under Samoa: A 2500-meter drill core to explore hotspot-trench interactions, continental recycling, the deep biosphere, and geothermal resources.”
Agency: International Continental Drilling Program (ICDP); Period: 07/01/2024 End Date: 08/31/2025
Lead PI: Matt Jackson (UCSB); co-PI’s include Ricardo Ramalho, Donato Giovanelli, Barbara Kleine-Marshall, Christoph Beier, Andri Stefánsson, Christoph Beier, Nicole Lautze, Sebastien Pilet, Katherine Birmingham, Saemundur Halldórsson, John MacLennan, Rita Parai, Kevin Konrad, Neil Mitchell

15. Amount: **\$364,996** (Jackson lab award to UCSB)
Title: “NSF GEO-NERC: Lithospheric architecture mantle, crustal, and sedimentary of the Cape Verde Archipelago provides unique insights into the construction of a hotspot volcano.” EAR-2437227
Agency: NSF GEO-NERC; Period: 04/01/2025 End Date: 03/31/2028
Lead PI: Matt Jackson (UCSB), Ricardo Ramalho (UK collaborator)

14. Amount: **\$345,956** (Jackson lab award to UCSB); \$1,076,466 (total grant award)
Title: “Collaborative Research: Was early Cenozoic Samoa and Rarotonga volcanism suppressed when the Ontong Java Plateau drifted over the hotspots?” OCE-2343988.
Agency: NSF-OCE; Period: 07/01/2024 to 06/30/2027
Lead PI: Matt Jackson (UCSB), Co-PIs: Kevin Konrad (UNLV), Val Finlayson (U. Maryland)

13. Amount: **\$883,268** (award shared with UCSB Earth Science colleagues).
Title: “Equipment: MRI Track 1: Acquisition of a Laser Ablation Time of Flight Inductively-Coupled Plasma Mass Spectrometer for UCSB Researchers and Educators”. EAR-2320389.
Agency: NSF-EAR; Period: 9/1/23 to 8/31/26
Lead PI: John Cottle (UCSB), Co-PIs: M. Jackson, R. Rudnick, A. Kylander-Clark (all at UCSB).

12. Amount: **\$262,663** (Jackson lab award at UCSB); \$1,127,665 (total grant award)
Title: “Collaborative Research: Interactions between the Tonga-Lau subduction system and the Samoan plume.” OCE-1929095.
Agency: NSF-OCE; Period: 09/01/20 to 8/31/25
Lead PI: Shawn Wei (Michigan State U.), Co-PIs: M. Jackson (UCSB), D. Weins (Washington U. St. Louis), Dave Stegman (Scripps Inst. Oceanography).

11. Amount: **\$264,874 + \$52,969** (Jackson lab award at UCSB + \$52,969 Supplement); \$998,217 (total grant award).
Title: “Collaborative Research: Do improved absolute plate motion models based on Cretaceous Western Pacific seamounts relate Louisville to Ontong-Java?” OCE-1912931.
Agency: NSF-OCE; Period: 09/01/20-08/31/25
Lead-PI: J. Konter (U. Hawaii-Manoa), Co-PIs: M. Jackson (UCSB), A. Koppers (U. Oregon), P. Wessel (U. Hawaii-Manoa)
10. Amount: **\$98,714** (Jackson lab award at UCSB); \$546,785 (total grant award)
Title: “Collaborative Research: Deciphering the LLSVP-plume relationship.” EAR-1900652.
Agency: NSF-EAR (CSEDI); Period: 05/01/19-04/30/23
Lead-PI: C. Lithgow-Bertelloni (UCLA), Co-PI: M. Jackson
9. Amount: **\$299,756 + \$34,374** (Jackson lab award at UCSB + \$34,374 Supplement); Supplement \$34,374 awarded Fall 2019
Title: “Origin of highly heterogeneous $^{87}\text{Sr}/^{86}\text{Sr}$ in melt inclusions from oceanic hotspot lavas.” OCE-1736984
Agency: NSF-OCE (Marine Geology & Geophysics); Period: 08/15/17 to 09/31/21.
Lead-PI: M. Jackson
8. Amount: **\$299,928** (Jackson lab award at UCSB)
Title: “Preservation of Hadean geochemical signatures in the Icelandic high $^3\text{He}/^4\text{He}$ mantle domain.” EAR-1624840
Agency: NSF-EAR (Petrology and Geochemistry); Period: 07/15/16 to 06/30/20
Lead-PI: M. Jackson
7. Amount: **\$524,244** (Jackson lab award at UCSB)
Title: “MRI: Acquisition of a Thermal Ionization Mass Spectrometer (TIMS) for high-precision isotopic research of the Earth’s mantle, crust and oceans.” EAR-1429648
Agency: NSF-EAR (MRI); Period: 09/01/14 to 12/31/19
Lead-PI: M. Jackson, Co-PI’s: J. Cottle, B. Hacker, M. Rioux, S. Weldeab
6. Amount: **\$111,566** (Jackson lab award at UCSB); \$206,590 (total grant award)
Title: “Collaborative Research: Using sulfur isotopes to identify subducted Archean crust in modern oceanic hotspot lavas.” EAR-1348082.
Agency: NSF-EAR (Petrology and Geochemistry); Period: 06/01/14 to 12/31/15
Lead-PI: M. Jackson, Co-PI: J. Farquhar (U. Maryland College Park)
5. Amount: **\$37,702** (Jackson lab award at UCSB); \$395,753 (total grant award)
Title: “Collaborative Research: The role of oxygen fugacity in calc-alkaline differentiation and the creation of continental crust at the Aleutian arc.” EAR-1347377.
Agency: NSF-EAR (GeoPRISMS); Period: 08/01/14-07/31/17
Lead-PI: K. Kelley (URI), Co-PI’s: L. Cottrell (Smithsonian), M. Jackson

4. Amount: **\$200,815** (Jackson lab award at Boston University); \$698,809 (total grant award)
 \$184,294 (Amount of award transferred to UCSB)
 Title: “Collaborative Research: Using the Rurutu hotspot to evaluate mantle motion and absolute plate motion models.” OCE-1153894.
 Agency: NSF-OCE (Marine Geology and Geophysics); Period: 07/01/12 – 09/30/15
 Lead-PI: J. Konter (U. Hawaii, Manoa), Co-PI's: M. Jackson, A.A.P. Koppers (Oregon State University)
3. Amount: **\$199,703** (Jackson lab award at Boston University)
 \$99,395 (Amount of award transferred to UCSB)
 Title: “Isotopic diversity in Mangaia melt inclusions: Mantle source or crustal assimilation?” EAR-1145202.
 Agency: NSF-EAR (Petrology and Geochemistry); Period: 02/01/12-01/31/15
 Lead-PI: M. Jackson
2. Amount: **\$220,000** (Jackson lab award at Boston University)
 \$392 (Amount of award transferred to UCSB)
 Title: “Constraining mantle flow between Samoa and the northern Lau and N. Fiji Basins with geochemistry and geodynamics.” OCE-1061134
 Agency: NSF-OCE (Marine Geology and Geophysics); Period: 01/01/11 - 3/31/14
 Lead-PI: M. Jackson, Co-PI: P. Hall
1. Amount: **\$140,000** (award at Boston University)
 Title: “Facility Support: Phase Two of a NSF/Boston University partnership ensuring long-term technician support for the BU TIMS Facility (technician support).” EAR-0949390
 Agency: NSF (Instrumentation and Facilities); Period: 06/01/10 - 05/31/12
 Lead-PI: E. Baxter, Co-PI's: M. Jackson, A. Kurtz, R. Murray

Summary of invited talks: 12 keynote and plenary presentations at international conferences, 28 invited presentations at conferences and workshops, and 67 invited seminars.

Keynote and Plenary Contributions at International Conferences

12. “Mantle geochemistry through time: the influence of delayed onset of continental subduction.” Earth’s History, Dynamics, and Planetary Habitability International Conference, Centre for Earth Evolution and Dynamics (CEED), Sundvollen, November 2022. **Keynote.**
11. “Geodynamic implications of He and W isotopes in Iceland hotspot lavas.” Goldschmidt 2020, session 2c: Ancient mantle heterogeneities through time: from observations to modelling. (Conference and keynote scheduled, but **withdrew presentation due to online format during covid-19 pandemic.**) **Keynote.**
10. “The Iceland hotspot: a long-lived, hot plume sampling early Hadean material from the deep mantle.” October 2019 Chapman Conference, Selfoss, Iceland. **Keynote.**
9. “Consequences for an Alternative Earth Composition: A Decade of Insight.” AGU, 2015. ‘*New Generation of Scientists*’ Union session at AGU for Macelwane Medal.

8. “Inferring the ‘geochemical geometry; of mantle plumes”. *Goldschmidt* 2015, Session 20f. Mantle-derived intraplate magmas, their xenolith and diamond cargo: process, timescales and geodynamic implications. Prague, August 2015. **Keynote.**
7. “The geochemical geometry of mantle plumes”. European Geophysical Union, 2014. Session GMPV3.1, Magmas from the mantle. Vienna, April 2015. **Kuno Lecture.**
6. “The origin of the mantle “species”: Five decades of debate.” *Goldschmidt* 2014, Session 5e. Intra-Plate Magmatism from Recycled Crust and Mantle. Sacramento, June 2014. **Clarke Medal talk.**
5. “Formation of mantle domains in the Hadean and Archaean: Evidence for deep mantle preservation in oceanic lavas.” *Deep Earth Structure and Dynamics*, multidisciplinary workshop, Collège de France. Paris, November 2012. **Plenary talk.**
4. “The deep mantle feeding Hawaiian volcanism: New perspectives on old models.” *AGU Chapman conference: Hawaiian volcanoes, from source to surface.* Hawaii, August 2012. **Plenary talk.**
3. “A new composition for the Earth: Implications for mantle dynamics.” *International Geological Congress*, Deep Earth Circulation session. Brisbane, August 2012. **Keynote.**
2. “New constraints on the composition of the Earth’s primitive mantle.” *Goldschmidt* 2011, Session 4e. Mantle Compositional Variability: From Ocean Basins to Melt Inclusions. Prague, August 2011. **Keynote.**
1. "Ocean Islands and mantle plumes: Outstanding geochemical and petrological questions." *AGU Chapman Conference: The Galápagos as a Laboratory for the Earth Sciences.* Galápagos, July 2011. **Plenary Talk.**

Other Invited Contributions at Conferences and Workshops

28. “A new geochemical database for ocean island basalts: A highly biased dataset and a potential solution.” Chicago Goldschmidt, Goldschmidt Conf. Program and Abstracts.” Goldschmidt, Chicago, August 2024.
27. “Where is the ancient ‘primordial’ domain in the Earth’s mantle?” UK-SEDI (Study of Earth's Deep Interior) meeting, University of Leeds, January 2024.
26. “Do the different geographic distributions of HIMU and EM mantle domains record later onset of continental crust subduction relative to oceanic crust subduction?” Goldschmidt, Lyon, July 2023.
25. “Reconciling continental crust in the LLSVPs with the transition zone “continental crust” filter.” Interior of the Earth Gordon Research Conference, Mt. Holyoke, June 2023.
24. “A geoneutrino “telescope” to view the inaccessibly deep interior of the Earth: Ushering in a new era of multi-messenger geophysics,” International Symposium "Frontier of Understanding Earth's Interior and Dynamics", August 2022, Tokyo Electron House of Creativity, Tohoku University, Katahira Campus.
23. “The lost continents: A history both ancient and deep” Rick Carlson symposium, May 2022 (virtual presentation.)
22. “Geochemical and seismological constraints on the locations and geometries of deep mantle reservoirs.” EGU 2020 session entitled “Mantle dynamics, structure and evolution: Combining geochemical, mineralogical and seismological constraints with geodynamics.” (Conference and keynote scheduled, but **withdrew presentation due to online format during covid-19 pandemic.**)
21. “Towards the geochemical structure of the mantle: Reconciling geochemical and geophysical constraints.” The ‘Evolving Earth’ Interdisciplinary Workshop, Amphiteatre de l'IPGP, Paris, June 2019.
20. “Hidden Hotspot Volcanoes and Disappearing Seamounts: The Joint Program in the Age of Ocean Discovery.” WHOI-MIT Joint Program 50-year anniversary, September 2018.

19. "Mantle isotopes." Lecture at CIDER Berkeley, July 2017.
18. "Sampling primordial reservoirs with hot plumes." UK-SEDI meeting, Burlington House, May 2017.
17. "Overview of questions and challenges." CIDER, UC Santa Barbara, June 2016.
16. "Chemical Geodynamics of Helium." CIDER Community Workshop, Point Reyes, May 2016.
15. "Sediment subduction and the generation of extreme geochemical enrichment in lavas erupted at oceanic hotspots." Fall AGU, 2015, Session V44A-05. Geochemistry of Sediments and Sediment Recycling and Implications for Crust and Mantle Evolution over Earth History I.
14. "Os-isotopic compositions of peridotite xenoliths from the oceanic mantle: Implications for the age of isotopic domains in the oceanic mantle." Fall AGU, 2015, Session D153A-07. Constraints on Heterogeneities in Earth's Mantle II.
13. "Sediment Subduction and the Generation of Extreme Geochemical Enrichment in Lavas Erupted at Oceanic Hotspots." Fall AGU, 2015, Session V44A-05. Geochemistry of sediments and sediment recycling and implications for crust and mantle evolution over Earth history I.
12. "Relating the chemistry and structure of the deepest mantle to the geochemistry of mantle melts erupted at the surface." Deep-Earth Processes meeting, Geological Society of London, Burlington House, September, 2014.
11. "Radiogenic heating and geo-neutrinos from mantle." Geo-neutrino Working Group Meeting at KITP, Santa Barbara, 2014.
10. "A genetic approach to mantle taxonomy reveals the geochemical geometry of a plume." Fall AGU 2013, Session DI008. Multidisciplinary constraints on the nature and scale of mantle Heterogeneities.
9. "Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas." Fall AGU 2013, Session DI006. Linking the Earth's surface with the deep interior: Comparing predictions and observations of mantle plumes.
8. "Major and trace element composition of the high $^3\text{He}/^4\text{He}$ (FOZO) mantle: Implications for the composition of the bulk silicate Earth". Interior of the Earth Gordon Research Conference, Mt. Holyoke, 2013.
7. "Mass independently fractionated sulfur isotopes reveal recycling of Archean lithosphere in modern oceanic hotspot lavas." Interior of the Earth Gordon Research Seminar, Mt. Holyoke, 2013.
6. "Mass independently fractionated sulfur isotopes reveal recycling of Archean lithosphere in modern oceanic hotspot lavas." EGU 2013. Vienna, Austria. April 2013.
5. "Radioactivity in primitive mantle." Neutrino Geoscience Conference, March 2013, Takayama, Japan.
4. "Trace element composition of a non-chondritic Earth: Potential solutions and geodynamic implications." Goldschmidt 2012, Session 5c, From chondrite to a differentiated Earth: The formation of primitive silicate reservoirs, their fate and evolution through Earth's early times. June 2012.
3. "The unusual Samoan hotspot: A 'hotspot highway' juxtaposed with a trench." AGU 2011, Session V15. The Subduction Filter: Effects on the Mantle, Arcs and Continents.
2. "Rehydration of the Deep Earth Indicated by Sediment Recycling." Fall AGU 2010, Session V15. The Subduction Filter: Effects on the Mantle, Arcs and Continents.
1. "The enigmatic high $^3\text{He}/^4\text{He}$ mantle: Characteristics and Origins." Fall AGU 2009, Session V31F. Mantle Heterogeneity: Origin, Scales, and Caveats.

Invited Seminars and other Presentations

67. "Where is the ancient high $^3\text{He}/^4\text{He}$ domain in the Earth's mantle, and how is it sampled by plumes?" School of Earth Sciences, Zhejiang University. May 2025. (virtual seminar presentation).
66. "Where is the ancient high $^3\text{He}/^4\text{He}$ domain in the Earth's mantle, and how is it sampled by plumes?" Oregon State University. January 2025.

65. "Submarine Volcanism." Museum Educator training series, Santa Barbara Museum of Natural History. April 2024.
64. "The lost continents: Geodynamic consequences for Neoproterozoic onset of continental subduction." Princeton, April 2023.
63. "The lost continents: Geodynamic consequences for Neoproterozoic onset of continental subduction." Coastal Geological Society, January 2023.
62. "The lost continents: Geodynamic consequences for Neoproterozoic onset of continental subduction." ETH, Switzerland. November 2022.
61. "Preserved primordial reservoirs: A history both ancient and deep". University of Oslo, April 2022 (virtual seminar presentation).
60. "Lost continents: A history both ancient and deep". University of Oslo, March 2022 (virtual seminar presentation).
59. "Lost continents and preserved primordial reservoirs: A history both ancient and deep". UCLA, March 2022.
58. "Lost continents and preserved primordial reservoirs: A history both ancient and deep". University of Chicago, March 2022 (virtual seminar presentation).
57. "Lost continents and preserved primordial reservoirs: A history both ancient and deep". University of Bern, November 2021.
56. "Ancient subducted crust, primordial reservoirs, and core-influenced mantle domains: Clues from volcanic hotspots". University of Utah, March 2021 (virtual seminar presentation).
55. "Interplay of core and recycled crust signals in mantle plumes: the coupled geodynamics of He and W." Clermont-Ferrand. Scheduled for May 2020. **Cancelled due to covid-19 pandemic.**
54. "Interplay of core and recycled crust signals in mantle plumes: the coupled geodynamics of He and W." ETH. Scheduled for April 2020. **Cancelled due to covid-19 pandemic.**
53. "Interplay of core and recycled crust signals in mantle plumes: the coupled geodynamics of He and W." Université de Brest. Scheduled for April 2020. **Cancelled due to covid-19 pandemic.**
52. "Interplay of core and recycled crust signals in mantle plumes: the coupled geodynamics of He and W." Cambridge U., February 2020.
51. "The Iceland hotspot: a long-lived, hot plume sampling early Hadean material from the deep mantle." November 2019, U. Iceland.
50. Lost continents and preserved primordial reservoirs: Clues from the Earth's deep interior. Louisiana State U., March 2018.
49. "Hidden Hotspot Volcanoes and Disappearing Seamounts: The Age of Ocean Discovery." Cosmopolitan Club, Santa Barbara, October 2018.
48. Lost continents and preserved primordial reservoirs: Clues from the Earth's deep interior. Cornell, September 2018.
47. Lost continents and preserved primordial reservoirs: Clues from the Earth's deep interior. Lehigh U., September 2018.
46. Lost continents and preserved primordial reservoirs: Clues from the Earth's deep interior. U. Washington, May 2018
45. Lost continents and preserved primordial reservoirs: Clues from the Earth's deep interior. Yale University, February 2018.
44. The fate of subducted tectonic plates and the survival of primordial reservoirs in the Earth's deep interior. Coastal Geological Society, September 2017.
43. Hot plumes entrain higher $^3\text{He}/^4\text{He}$. California State University Fresno, April 2017.
42. Plumes and Helium. U. Nebraska, March 2015.

41. The geochemical geometry of mantle plumes. U. South Carolina, November 2015.
40. Geochemical and geodynamic consequences for a non-chondritic Earth. Lamont Doherty Earth Observatory, September 2015.
39. The geochemical geometry of mantle plumes. UT Austin, September 2015.
38. The geochemical geometry of mantle plumes. UC Davis, May 2015.
37. Relating the chemistry and structure of the deepest mantle to the geochemistry of mantle melts erupted at the surface. U. Oslo, September 2014.
36. Relating the chemistry and structure of the deepest mantle to the geochemistry of mantle melts erupted at the surface. U. Iowa. September 2014.
35. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Caltech Geological and Planetary Sciences Division seminar. October 2013.
34. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, MIT Chemical Oceanography and Geobiology seminar. September 2013.
33. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, U. Wyoming. April 2013.
32. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, UC Santa Cruz, Earth and Planetary Sciences Department, Dept. Colloquium. March 2013.
31. Opening Pandora's box: What is the Earth's composition? U. of British Columbia, Department of Earth, Ocean and Atmospheric Sciences, Dept. Colloquium. February 2013.
30. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Georgia Tech, School of Earth and Atmospheric Sciences, February 2013.
29. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, UC Santa Barbara, Department of Earth Science, February 2013.
28. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Arizona State Univ., School of Earth and Space Exploration, February 2013.
27. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Washington University St. Louis, Dept. of Earth and Planetary Sciences, January 2013.
26. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Scripps Institute of Oceanography. Departmental Seminar. January 2013.
25. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, Rice. January 2013.
24. Returning from the deep: Archean atmospheric fingerprints in modern hotspot lavas, Oxford U., January 2013.
23. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, Brown U. 2013.
22. The lost continents and oceanic plates: Resurrection in mantle plumes, Gechemistry Seminar, IPGP, Paris, France, Nov. 2012.
21. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, U. Oregon, Oct. 2012.
20. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, UNC, Oct. 2012.
19. The lost continents and oceanic plates: Resurrection in mantle plumes, Dept. Seminar, SOEST, U. Hawaii. Sept, 2012.
18. "The deep mantle feeding hotspot volcanoes: New perspectives and future ways forward." U. of Idaho, Sept. 2012.
17. "What is the Composition of the Bulk Silicate Earth?" CIDER workshop, Santa Barbara. July 2012.

16. "What is the composition of the Earth." Harvard, Dept. Colloquium. April 2012.
15. "Redefining the composition of the Earth: Implications for global geodynamics." CIDER post-AGU workshop. December 2011.
14. "Redefining the composition of the Earth." Boston College, Dept. Colloquium. November 2011.
13. "Redefining the composition of the Earth." U. of Rochester, Dept. Colloquium. November 2011.
12. "Redefining the composition of the Earth." U. of British Columbia, Dept. Colloquium. October 2011.
11. "A surviving piece of the earliest Earth?" University of Rhode Island, GSO, Dept. Colloquium. May 2011.
10. "A surviving portion of the earliest Earth?" Laboratoire Magmas et Volcans, Université Blaise Pascal, Clermont-Ferrand, France. March 2011.
9. "A surviving portion of the Earliest Earth?" UC Berkeley. March 2011.
8. "A Surviving Piece of the Earliest Earth?" Geochem. Seminar, U. of Hawaii, Manoa. January 2011.
7. "A Surviving Piece of the Earliest Earth?" Princeton, Dept. Colloquium. September 2010.
6. "The fate of subducted continental crust in the Earth's mantle: Evidence from the Samoan hotspot." Smithsonian Museum of Natural History, September 23, 2009.
5. "The fate of subducted continental crust in the Earth's mantle: Evidence from the Samoan hotspot." James Madison University, Dept. Colloquium. October 1, 2009.
4. "The fate of subducted continental crust in the Earth's mantle: Evidence from the Samoan hotspot." Geological Society of Washington, September 2008.
3. "Pervasive isotopic disequilibrium in ocean island lavas: Clinopyroxene phenocrysts and melt inclusions." University of Maryland, September 2008.
2. "The return of subducted crust in Samoan lavas: Implications for mantle dynamics." Boston University, February 2008.
1. "Sr isotopes in melt inclusions from Samoan basalts: Clues about the nature of FOZO." Brown University, February 2006.

Leadership and Service to Field

- Geochemical Society Award Nomination Committee (July 2024-June 2027)
- Co-host of virtual component of workshop for NSF-OCE sponsored Future Ocean Drilling in the United States (FOCUS) 2024 workshop (March 2024)
- Virtual breakout session leader (for 2 days) for FUTURE Workshop (*Future of US Marine Seafloor and Sub-Seafloor Sampling Capabilities Workshop*), March 26-27, 2024.
- AGU Annual Meeting Program Chair Search Committee, February 2024.
- MARSSAM Deep Sea Dredging Facility, Advisory committee (2022-2023).
- Worked with community scientists and NSF to demonstrate the urgent need for a Deep Sea Dredging Facility as part of NSF-OCE (Division of Ocean Sciences) Facilities. The Deep Sea Dredging Facility was ultimately funded by NSF.
- Worked with the newly formed NSF-funded MARSSAM dredge pool for their very first dredge operation. This required significant background work and planning with the dredge pool prior to the expedition, as well as follow-up communications with the dredge pool regarding lessons learned.
- Worked with the curator of the OSU marine sample repository to establish the first official protocols for preparing and archiving samples obtained shipboard for direct transport to a marine repository under the auspices of the MARSSAM dredge pool.
- Chair, F.W. Clarke Award Committee, Geochemical Society, Summer 2022-2023.
- NSF panelist, 2015, 2018, 2024
- Secretary, Volcanology Geology & Geochemistry Section, American Geophysical Union (2019-2021)

- Early Career Scientist Mentoring Breakfast (Participant), AGU Fall Meeting, 2020.
- Scientific Committee for Neutrino Geoscience 2019 meeting in Prague.
- Committee member, Nature “Awards for Mentoring in Science”, September 20, 2016
- SZO workshop, Boise Idaho. Breakout group discussion leader for “Enabling Interdisciplinary Collaboration,” Sept 2016.
- Discussion leader (Session 1: “From accretion to today: the evolution of Earth’s deep interior”), Gordon Research conference, Mt. Holyoke, 2017.
- Mentor for Fall Meeting 2017 Union Session for Student Engagement to Enhance Development (SEED).
- Judge for student presentations at EGU Spring meeting (2015) and AGU Fall meetings, 2010, 2011, 2012, 2013, 2016, 2017.
- Kuno Award committee, AGU, 2015, 2016, 2017.
- AGU-VGP Liaison, Program Committee, Geochemical Society, 2013 - October 2016.
- Chair, Program Committee, Geochemical Society 2014-2015.
- Organizing committee, CIDER (Cooperative Institute for Dynamic Earth Research) 2016.
- Proposal writing committee, CIDER (Cooperative Institute for Dynamic Earth Research); co-wrote “scientific motivation” portion of NSF CIDER-renewal grant with Ved Lekic, 2016.
- Advisory committee member, CIDER (Cooperative Inst. for Dynamic Earth Research) 2012-2015.
- Lecturer/tutorial leader, CIDER, 2014 (UCSB)
- MIT-WHOI Joint Program alumni committee. 2013-Present.
- Invited Participant, EarthCube Earth Career Strategic Visioning Workshop, Oct. 2012.
- Invited participant and scribe at the IODP “Building U.S. Strategies Workshop”. May 2012.
- Invited participant at Eastern Pacific Workshop, to determine targets of the R/V Nautilus in the Eastern Pacific for the next 2 years.
- Invited participant at NSF-sponsored CSEDI 10-year planning committee. San Diego, 2015.
- Refereed articles for *Nature*, *Science*, *Geology*, *Earth and Planetary Science Letters*, *Geochimica et Cosmochimica Acta*, *Chemical Geology*, *Journal of Geophysical Research Letters*, *Solid Earth Discussions*, *Reviews of Geophysics*, *Journal of Petrology*, and *Contribution to Mineralogy and Petrology*.
- Refereed proposals for NSF-EAR, NSF-OCE, NSF-IODP, NSERC (Canada) and NERC (UK).

Service at International Meetings/Conferences

International conference sessions chaired/co-chaired:

22. Co-convener (with Andrea Giuliani, Erwin Schettino, Matthew Steele-MacInnis) of 2024 Fall AGU session titled, “The role of carbon in the mantle, magmatic and hydrothermal processes.” [Helped organize session but was unable to attend AGU.]
21. Co-convener (with Ricardo Ramalho, Pilar Madrigal, Antonio Manjon-Cabeza Cordoba, Lars Rupke) of 2024 Fall AGU session titled, “Oceanic magmatism and dynamics: multidisciplinary perspectives on hot spots and seamounts.” [Helped organize session but was unable to attend AGU.]
20. Co-convener (with Qian Yuan, Adina Pusok, Vasilije Dobrosavljevic, and Jung-Hun Song) of 2023 Fall AGU session titled, “Exploring complex mantle dynamics with observations, laboratory experiments and computer models.” [Helped organize session but was unable to attend AGU.]

19. Co-convener (with Val Finlayson, Aaron Pietruszka, and Tyrone Rooney) of 2022 Fall AGU session titled, “Hotspots and Plumes: An Interdisciplinary Examination of the Critical Link Between Deep and Shallow Earth Processes.”
18. Co-convener (with Pritwiraj Moulik, Susannah Dorfman, and Wenyu Zhou) of 2022 Fall AGU session titled, “Heterogeneity in the Earth's Mantle: Perspectives from Imaging, Modeling, Geochemistry, and Experiments.”
17. Co-convener (with Andrea Giuliani, Jenny Jenkins, and Anna Gülcher) of 2021 Fall AGU session titled, “Interdisciplinary perspectives on intraplate magmatism, mantle plumes, and the deep Earth - both past and present.”
16. Co-convener (with Christy Till) of 2020 Fall AGU session titled, “Topics in Volcanology, Geochemistry, and Petrology.”
15. Co-convener (with Janne Koornneef) of 2019 Barcelona Goldschmidt session titled, “Melt and fluid inclusions hosted in lavas and their xenolith cargo: tools for understanding magma and mantle evolution.”
14. Co-convener (with Andrea Giuliani and Ashlea Wainwright) of 2018 Boston Goldschmidt session titled, “Magmas and their cargoes as tracers of mantle evolution: Implications for Chemical Geodynamics.”
13. Co-convener and co-chair (with Andrea Giuliani and Ashlea Wainwright) of 2017 Paris Goldschmidt session titled, “The geochemistry of intraplate magmas: Mantle sources, metasomatism, magmatic processes and xenolith cargoes.”
12. Co-convener and co-chair (with Pilar Madrigal, Curtis Williams, Jessica C. Irving, Elizabeth Cottrell) of 2016 AGU SEDI session titled “Heterogeneity in Earth’s Deep Interior – from natural and laboratory observations to theoretical models”.
11. Co-chair (with Rita Parai, Shichun Haung and Sujoy Mukhopadhyay) of 2015 AGU session titled, “Chemistry of the Earth’s mantle: Implications for the structure and evolution of the Earth.”
10. Co-convener and co-chair (with Peter van Keken) of 2015 Goldschmidt session entitled “Chemical geodynamics through time.”
9. Co-convener and co-chair (with James Day and Jasper Konter) of 2014 AGU session titled, “The geochemical diversity of the mantle inferred from hotspots: Five decades of debate.”
8. Co-convener and co-chair (with Hanika Rizo and Vicky Bennett) of 2014 Goldschmidt session titled, “Chemical heterogeneities in the Early Earth: their formation, preservation and destruction.”
7. Co-convener and co-chair (with James Day and Jasper Konter) American Geophysical Union session titled, “Ocean islands and large igneous provinces.” Fall AGU, 2013.
6. Co-convener and co-chair (with Esteban Gazel, Paul Hall, Shichun Huang, Dominic Weis, Ed Garnero, Cinzia Farnetani) American Geophysical Union session titled, “Mantle Plumes: What Do We Really Know?” Fall AGU, 2012.
5. Co-convener and co-chair (with Paul Hall and Nick Schmerr) American Geophysical Union session, “Mantle plumes: combining perspectives from geophysics, geochemistry and geodynamics”. Fall AGU, 2011.
4. Co-convener and co-chair (with Al Hofmann, Francis Albarede and Thorsten Becker) of 2011 Goldschmidt session, “Chemical Geodynamics: 25 Years of Mantle Components.”
3. Co-convener and co-chair (with James Day and Raj Dasgupta) of 2010 Goldschmidt session, “Mantle Reservoirs and their Creation.”
2. Co-convener and co-chair (with Jessica Warren, Estelle Rose-Koga, Ken Koga and Stan Hart) of AGU session, “Using Small-Scale Observations to Answer Big Questions in Earth Sciences: Advances From 30 Years of Ion Microprobe Analysis”. Fall AGU, 2009.

1. Co-convenor and co-chair (with Glenn Gaetani) American Geophysical Union session, “From Subduction Zones to Mantle Plumes: High Field Strength Elements as Geochemical Tracers of Crustal Recycling”. Fall AGU, 2008.

Goldschmidt Theme co-chair:

1. Theme co-chair (with Maxim Ballmer, Wendy Mao, and Katie Smart) for theme 2 (“Mantle to Core”) of the 2021 Goldschmidt (Lyon).
2. Theme co-chair (with Vincent Salters and Gretchen Frueh-Green) for theme 5, (“Mantle to Crust”) of the 2014 Goldschmidt (Sacramento).
3. Theme co-chair (with Julie Bryce, Raj Dasgupta, John MacLennan, Dave Stegman, and James Van Orman) for theme 4 (“Mantle to Crust: Ocean Ridge and Intraplate Volcanism”) of the 2011 Goldschmidt (Prague).

University and Departmental Service, UCSB

- Grad program committee (2025-2026, member), Alumni, Donors and Development (2025-2026, member), Department Intellectual Life (2025-2026, member), Information Technology (2025-2026, chair), Instrumentation (2025-2026, member)
- UCSB Faculty Mentoring Program (Campus Mentor, 2025-2026). Mentored Dr. Zijian, Department of Mathematics
- ERI Director search committee (Fall 2024-Winter 2025); co-author (with Roberta Rudnick) of appointment letter.
- Council on Research and Instructional Resources (CRIR)– Academic Senate UCSB (September 2023 -
->I served on a faculty grants committee to re-evaluate and streamline grant policies (Fall 2024-Spring 2024)
->Gave presentation at campus-wide “Open Forum on Data Management” (Spring 2024).
->Reviewed Faculty grants (2024, 2025)
- Department Intellectual Life Committee (Chair, Fall 2022 - 2023). Member 2022-2025.
- Alumni-Donor-Development committee (2021-). Chair 2024-2025.
- Merit and Promotion oversight committee (Chair, Fall 2023 - 2024). Member 2024-2025.
- Instrumental committee (Nov 2021-)
- Information Technology committee (Nov 2021-)
- Co-wrote response with John Cottle, Jordan Clark, and Chen Ji) for “Support Services” section of data notebook for 2022-2023 Department External Review. Winter 2023.
- Packard Fellowship campus internal committee member. Winter 2023, Winter 2024
- Wrote 596 syllabus with John Cottle. Fall 2023.
- Lead writer (with John Cottle, Jordan Clark, and Chen Ji) for “Support Services” section of data notebook for 2022-2023 Department External Review.
- Graduate Council member – Academic Senate UCSB (Sept 1, 2018 until Aug 31, 2019; Sept 1, 2020 until Aug 31, 2022).
Recruitment Fellowship Committee (Feb 2019).
Goodchild Graduate Mentoring Award Committee (May 2019, May 2022).
Genetti Award Committee (May 2022)
Graduate Opportunity Fellowship Committee and President’s Dissertation Committee (May 2022)
Evaluate graduate program in Linguistics Department external review (2020-2021).
Evaluate graduate program in Economics Department external review (2022).
- Graduate Admissions Committee (Oct 2017 – June 2021)

- Environmental Health and Safety peer review of laboratory safety program; Representative for Earth Sci. Dept. (Nov, 2018).
- Organized Speaker's Club (department seminar series). 2015-2016; 2017-2018 UCSB.
- Geophysics search committee member, 2015-2016. UCSB.
- Faculty Senate representative (Sept 2014 – Spring 2015). UCSB.
- Search committee for Dept. Earth Science Electronics Engineer. Summer 2015-Spring 2016. UCSB.
- Comprehensive exam grader. 2015-2016. UCSB.
- Co-leader of field trip for visiting prospective graduate students, March 2015 (with Alex Sims). UCSB
- “Earth evolution” meeting participant for ERI external review (Oct 2014). UCSB.
- IGPMS meet-and-greet with students (Oct. 24, 2014). UCSB.
- Space committee (Oct. 2014, substituting for Toshiro Tanimoto). UCSB.
- Faculty Senate, Fall 2013 (in lieu of John Cottle; October 18, 2013 meeting) and Spring 2014 (in lieu of Stan Awramik; May 8, 2014 meeting). UCSB
- Served as written exam co-ordinator for Luyuan Ding (Mar. 2014). UCSB

Graduate thesis committees

- Morgan Adamson (Ph.D., committee member, UCSB, 2024-)
- Joseph Lewis-Merrill (UCLA, external committee member, Ph.D. Committee 2025).
- Alec Baudry (Ph.D. committee member, UCSB, 2024-)
- Yifan Du (Ph.D. committee member, UCSB, 2023-)
- George Segee-Wright (U. Texas, Austin, external thesis committee member, 2020; Qualifying exam committee May 2021, defense April 2024)
- Xiyuan Bao (UCLA, external committee member for qualifying exam, 2020; defense January 2024)
- Andri Ingvason (U. Iceland, Master's thesis, external committee member, May 2021)
- Pengyuan Han (Placement committee, Nov. 2019; Advisory Committee April 2020; Comprehensive Committee February 2021; PhD defense June 2025).
- Ruixia Bai (Ph.D. committee member, UCSB, 2020, 2021)
- Sunna Harðardóttir (Ph.D. committee member, UCSB, 2020, 2021)
- Sunna Harðardóttir (MS thesis committee, University of Iceland, Fall 2019).
- Olivia Anderson (Ph.D. committee chair, UCSB, PhD defense September 2024).
- James Dottin (Ph.D. committee, external member, 2018; PhD defense April 2020). U. Maryland.
- Lori Willhite (comprehensive committee, November 2018). UCSB.
- Mark Edwards (comprehensive committee, May 2018). UCSB.
- Al Greaney (qualifying exam, April 2017; Ph.D. defense committee, November 2018). UCSB.
- Andrew Reinhard (comprehensive committee, chair, November 2016). UCSB
- Jenna Adams (comprehensive committee, November 2016; qualifying exam, June 2018; PhD defense July 2020). UCSB
- Madeline Shaffer (comprehensive committee, October 2016; defended May 2017). UCSB
- Nicoletta Browne (comprehensive committee, Oct 2016; M.A. Thesis Committee Jan 2018). UCSB
- Jared Wilson (comprehensive committee, November 2016; M.A. Thesis Committee Jan 2018). UCSB
- Will Junkin (comprehensive committee, December 2015; but not defense committee). UCSB
- Melissa Scruggs (comprehensive committee, November 2015; qualifying exam October 2017). UCSB
- Menso de Jong (comprehensive committee, November 2015; qualifying exam Feb 2017, PhD defense March 2020). UCSB
- Nina Bingham (Geography, MS thesis committee, Fall 2015). UCSB
- Ryan Neilson (qualifying exam, July 2015; PhD examination committee, June 2017). UCSB

- Graham Hagen-Peter (PhD examination committee, July 2015). UCSB
- Mary Kate Fiddler (qualifying exam committee, July 2015; PhD examination committee, December 2017). UCSB
- Forrest Horton (PhD examination committee, June 2015). UCSB
- Alison Price (comprehensive committee, Spring 2013; qualifying exam committee, March 2015; PhD examination committee, August 2016). Boston University and UCSB.
- Herrmann Drescher (Master's defense committee, external member, Sept. 2014). U. Oslo
- Demian Nelson (comprehensive committee, 2014; qualifying exam committee, April 2015; defended July 2018). UCSB
- Jason Schmidt (comprehensive committee, 2014; Master's defense committee, 2015). UCSB
- Josh Garber (qualifying exam committee, Nov 2013; PhD examination committee, Oct 2017). UCSB
- Emily Wilson (Master's defense committee external member, May 2013). U. Idaho
- Katherine Eccles (comprehensive committee, chair; Spring 2013). Boston University.
- Ann Dunlea (comprehensive committee, Spring 2012). Boston University.
- Mu Shangshang (comprehensive committee, Spring 2012). Boston University.
- Rohan Kundargi (Master's defense committee, Spring 2012). Boston University.
- Rita Cabral (comprehensive committee, Spring 2012; PhD examination committee, April 2014). Boston University.
- Ken Takagi (comprehensive committee, Spring 2011). Boston University.
- Ethan Fahey (Master's defense committee, Spring 2011). Boston University.
- Jen Lamp (comprehensive committee, Fall 2011). Boston University.
- Nora Sullivan (comprehensive committee, Spring 2010). Boston University.
- Rachel Scudder (comprehensive committee, Summer 2010). Boston University.

Teaching

- Nominated for Distinguished Teaching Award (did not pursue nomination), Fall 2014.
- UCSB, Earth 215: Isotope Geochemistry.
- UCSB, Earth 201A: Graduate Research Seminar.
- UCSB, Earth 124IG and 224IG: Intro. Geochemistry.
- UCSB, Earth 20: Geological Catastrophes.
- UCSB, Earth 2: Physical Geology
- UCSB, Earth 282B: Field studies (on ship).
- Boston University, ES772: Trace Element Geochemistry.
- Boston University, ES424: Igneous and Metamorphic Petrology.
- Boston University, ES371&671: Intro. Geochemistry.
- Boston University, ES302: History of the Earth.
- Boston College, Guest Lecturer, co-taught GE530: Marine Geology.

Graduate Student, Undergraduate Student, and Post-Doctoral Mentoring

-Postdocs:

3. Ben Byerly at UCSB (2018-2019).
2. Xiao Li Wang at UCSB (2014-2015; with Maosheng Miao and Frank Spera)
1. Gordana Garapic at UCSB (2013-2014).

-Graduate students:

11. Joe Martin (UCSB, M.S., 1st year)

10. Alec Beaudry (UCSB, Ph.D., 1st year)
9. Yifan Du (UCSB, Ph.D., 2nd year)
8. Ruixia Bai (UCSB, Ph.D., 4rd year)
7. Sunna Harðardóttir (UCSB, Ph.D., June 2025)
6. Olivia Anderson (UCSB, Ph.D., September 2024)
5. Lori Willhite (UCSB, M.S., September 2019)
4. Mark Edwards (UCSB, M.S. September 2018)
3. Andrew Reinhard (UCSB, Ph.D. September 2018)
2. Alison Price (UCSB, Ph.D. 2016).
1. Rita Cabral (Boston University, Ph.D. May 2014)

-Undergraduate students:

28. Joe Martin (2024). 199RA (Summer 2024, Fall 2024). Mass spectrometry and clean lab introduction.
27. Alex Roginski (2024). 199RA (Spring 2024). Major and trace element analysis of global OIB database to distinguish OIB and MORB compositions.
26. Brooke Lindsay (2023-2024). 199RA (Fall 2023, Winter 2024, Spring 2024, Fall 2024). Mass spectrometry and clean lab introduction.
25. Melody Hines (2023-2024). Senior thesis. Hydrogen isotopes in Samoan volcanic glass.
24. Emelyn Juenger (Spring 2023). Independent study (199RA). Geochemistry of south Pacific seamounts in ORCA OBS deployment region.
22. Ben Jantz (Spring 2023). Carbonates in OIBs.
21. Emlyn Helmbacher (Winter 2023). Completed “teaching practicum” (EARTH 187) for my Earth 2 class.
20. Jonathan Grossman (2023). Independent study (99 in Winter, 199Ra in Spring. Geochemistry of Cretaceous Samoan seamounts.
19. Starla Toto (2021-2022). Senior thesis. Geochemistry of seamounts along the Arago and Macdonald hotspot tracks.
18. Allissa Drye (Spring 2021). Independent study (Earth 199) to compile global geochemical database for oceanic hotspots.
17. Keli McGuire (Winter 2021, Spring 2021). Independent study (Earth 199) to compile global geochemical database for oceanic hotspots.
16. Gordon Williams (Spring 2019). Independent study (Earth 199RA) to examine Sr isotopic compositions of olivines in Baffin Island lavas by TIMS.
15. Scott Peimann (2018-2019). Senior thesis (Earth 196) examining carbonatites from Cape Verde and Canary Is.
14. Cassidy Meehan (2017). Co-advised with graduate student, Mark Edwards. Independent study (enrolled in Earth 199RA) to evaluate anthropogenic CO₂ production resulting from wetlands restoration project.
13. Alexandra Nicklin (2017, 2018). Independent study (enrolled in Earth 199) to identify the mineral hauyne in oceanic lavas and determine variability in its composition.
12. Jonathan Pinko (2016). Senior Thesis (enrolled in Earth 196). Recipient of competitive Undergraduate Research & Creative Activities (URCA) funding (\$750) for research in the senior thesis.
11. Lori Willhite (2016). Independent study (enrolled in Earth 199). Recipient of competitive Undergraduate Research & Creative Activities (URCA) funding (\$750) for undergraduate research.

10. Floyd Jaggy (2014-2015); Summer 2014 (enrolled in 199RA), Fall 2014 (199RA), Winter 2015 (199RA). Recipient of 2015 Coastal Geological Society Award. UCSB
9. Addison Sani (2014-2015; 2015 Winter enrolled in Earth 199; 2015 Spring enrolled in 199Ra). UCSB
8. David Huckle (Boston U.). Served as UROP (Undergraduate Research Opportunity) sponsor and (Summer 2010) Directed Study advisor (Fall 2010). Mr. Huckle presented his research as a poster at the Fall 2010 AGU meeting. Boston University
7. Jarod Payne (Boston U.). Senior thesis advisor for Jarod Payne (Fall 2011 – Spring 2012). Mr. Payne presented his research as a poster during the Fall 2011 meeting and his work was published (with Mr. Payne as lead author) in the journal *Geology*. Boston University
6. Stephanie Kukolich (Boston U.). Served as UROP sponsor (Summer 2012, Fall 2012). Ms. Kukolich presented the results of her research at the Fall 2012 AGU meeting. Boston University
5. Moira Poje (Boston U.). Supervised independent research project. (Spring 2012 – Spring 2013). Ms. Poje joined us on a 5-week NSF-funded oceanographic cruise to the Tuvalu atolls (summer 2013). Boston University
4. Caitlin Brown (Boston U.). Supervised independent research project. (Summer 2010-Summer 2011). Boston University
3. Zuo Jin (“Georgie”) Ang (Boston U.). Supervised independent research project. (Spring 2011). Boston University
2. Austin Su (Boston U.). Supervised independent research project. (Summer 2011). Boston University
1. Jessica Stellman (Boston U.). Supervised independent research project. (Fall 2011). Boston University

Outreach

- Media outreach for discovery of young volcano in the Cook Islands:
<https://www.msn.com/en-us/science/earth-science/new-underwater-volcanoes-were-discovered-near-the-cook-islands-and-some-may-be-active/ar-AA1BQQBk>
<https://www.cookislandsnews.com/internal/national/environment/researchers-find-active-volcanic-hotspot-in-cook-islands-seabed/>
- Laguna Blanca middle school. Judge for Mission to Mars student projects (January 23 2025).
- UCSB *Current* piece on Fagradalsfjall eruption (Sept 2022):
<https://www.news.ucsb.edu/2022/020712/earth-s-newest-secret>
- Geology Bites podcast. Discussed implications of research on hotspots for origin of mantle heterogeneity (January 2022). <https://www.geologybites.com/matt-jackson>
- Interview with KCLU (NPR station) to discuss impact of Icelandic eruption at Geldingadalur (April 2021). <https://www.kclu.org/local-news/2021-04-06/south-coast-geologist-has-front-row-seat-to-birth-of-worlds-newest-volcano>
- UCSB *Current* piece on Icelandic eruption: <https://www.news.ucsb.edu/2021/020228/volcano-down-road>
- During the 2017 seagoing expedition to American Samoa and Independent Samoa aboard the NOAA Okeanos Explorer, we conducted ship tours for local students, teachers, VIPs and media in both Pago Pago and Apia. 118 participants visited the ship in Pago Pago, American Samoa and ~115 participants and 15 media representatives visited the ship in Apia, Samoa. The expedition received news and media coverage by more than 45 outlets (including CNN, CBS, Huffington Post, Scientific American, Gizmodo, and local media in American Samoa and Samoa). Live video feeds of the expedition were streamed to the public worldwide via the Internet, with the live video

- received more than 6.2 million views via YouTube and Facebook. We conducted two live interactions with the Tauese P.F. Sunia Ocean Center in American Samoa to engage and share the expedition with ~170 local students, the Office of Samoan affairs, and other agency representatives and officials. At least 48 scientists and students from 12 U.S. states and 5 countries (Japan, Russia, Chile, and Trinidad and Tobago) participated in the expedition as members of the science team.
- Co-leader (with Jasper Konter) of a tour of the research vessel R/V Roger Revelle. Gave a presentation of ship-board operations to a group of Fijian students while at port in Fiji. August 2013
 - Gave a presentation to the Mangaia (Cook Islands) high school about the geological history of the island, August 2010.
 - Taught elementary classes about tsunami hazards, Ta'u high school, American Samoa, two weeks after local tsunami, October 2009.
 - Co-taught two day-long classes about local geology at Ta'u and Savai'i high schools in American and Independent Samoa, 2005 and 2006.
 - Interviewed with *Nature* Podcast, Preceding *Nature* (2007) publication, August, 2007.
 - Interviewed with BBC News, Physics Today, National Geographic, Scientific American, Discovery, Our Amazing Planet, Chemical and Engineering News, New Scientist, Deutschlandfunk (German radio station), etc. Preceding *Nature* (2010) paper publication, August 2010.
 - Interviewed with Earth Magazine, DiscoveryNews, Science Daily, etc. Preceding *Nature* (2011) paper publication, August 2011.
 - Served as Samoan expert on television interview during the aftermath of the Samoan tsunami/earthquake (Oct 1, 2009). Harrisonburg, VA.

Synergistic Activities

- CIDER workshop participant (Cooperative Institute for Dynamic Earth Research). Participated in discussions exploring interdisciplinary approaches to deep earth problems. Summer 2006, 2012, 2013, 2014, 2016, 2017.
- Attended DINGUE 2 (Developments in Noble Gas Understanding and Expertise) workshop to give invited talk, Paris, France. August 12-13, 2011.

Shipboard experience

- I have spent approximately 7 months at sea on 7 different oceanographic expeditions, including multiple dredging expeditions, shipboard on a NOAA ROV expedition, and an Alvin cruise. I have participated shipboard on four dredging expeditions (three as co-PI) and remotely supervised dredging operations from shore (as co-PI) on two additional dredging expedition.
- Co-PI aboard the R/V Kilo Moana, dredging in American Samoa; I supervised dredging operations from ashore. 7 days (August, 2025).
 - Co-PI aboard the R/V Thompson, Samoa-Cook Islands, Niue: OBS deployment and dredging islands and seamounts in Cook Islands and Niue. November-December, 2023.
 - Co-PI aboard the R/V Kilo Moana, Western Pacific Seamount Province dredging expedition: Dredged the Cretaceous portion of the Samoa and Arago hotspots. January-February, 2022.
 - Co-PI on the R/V Roger Revelle, dredging seamount in the eastern region of the American Samoa EEZ; I supervised dredging operations from ashore. 3 days (December 9-11, 2021).
 - Supervising scientist "from ashore" on two additional ROV expeditions: EX1703 expedition on NOAA Okeanos Explorer in March 2017, NA112 Nautilus expedition in July/August 2019.

- Geology Lead Scientist, EX1702 expedition aboard the NOAA *Okeanos Explorer*. ROV dives were conducted on island and seamount targets throughout the American Samoa Exclusive Economic Zone.
- Co-PI aboard the R/V Roger Revelle, Rurutu hotspot expedition: Dredged the Tuvalu islands and seamounts to constrain their age and origin. July-August, 2013
- Shipboard Scientific Party aboard the R/V Kilo Moana, ALIA expedition in Samoa: Dredged Samoan seamounts to constrain hotspot age-progression. May 2005.
- Shipboard Scientific Party aboard R/V Atlantis: Deep-sea coral collection from New England Seamounts with DSV Alvin. May-June 2003.