

Jessica M. Warren - Professor, University of Delaware

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EDUCATION

- 2007 **Ph.D.** in Geochemistry and Geophysics, MIT/WHOI Joint Program
The Oceanic Upper Mantle: Rheological and Geochemical Constraints
- 2003 **M.A.** in Natural Sciences, University of Cambridge
- 2000 **M.Sci.** in Natural Sciences, University of Cambridge
- 1999 **B.A. First Class** in Natural Sciences, University of Cambridge

APPOINTMENTS

- 2022-present **Professor**, Department of Earth Sciences, University of Delaware
- 2014-present **Research Associate**, National Museum of Natural History, Smithsonian Institution
- 2018-2022 **Associate Professor**, Department of Earth Sciences, University of Delaware
- 2015-2018 **Assistant Professor**, Department of Geological Sciences, University of Delaware
- 2014-2016 **Visiting Investigator**, Dept. of Terrestrial Magnetism, Carnegie Institution for Science
- 2015 **Sabbatical Visitor**, Dept. of Earth Sciences, University of Oxford
- 2010-2015 **Assistant Professor**, Dept. of Geological Sciences, Stanford University
- 2008-2010 **Postdoctoral Fellow**, Dept. of Terrestrial Magnetism, Carnegie Institution for Science
- 2007 **Postdoctoral Investigator**, Geology & Geophysics, Woods Hole Oceanographic Inst.
- 2005-2006 **COE-21 Collaborative Researcher**, Okayama University at Misasa
- 2001-2007 **Research Assistant**, Dept. of Geology & Geophysics, Woods Hole Oceanographic Inst.

HONORS AND AWARDS

- 2013-2018 CAREER Award, National Science Foundation
- 2015 Stanford Presidential Research Grants for Junior Faculty
- 2013-2015 Frederick E. Terman Fellowship, Stanford University
- 2011 Stanford Presidential Research Grants for Junior Faculty
- 2008-2010 Carnegie Postdoctoral Fellow, Carnegie Institution of Washington
- 2002-2003 Stanley W. Watson Fellowship, MIT/WHOI Joint Program
- 2001-2002 Charles Davis Hollister Fellowship, MIT/WHOI Joint Program
- 1998-1999 Skerne Scholarship, University of Cambridge

PUBLICATIONS

(*invited; † Warren lab member; ‡ student collaborator)

Boettcher, M.S., E.C. Roland, **J.M. Warren**, R.L. Evans, and J.A. Collins. Probing Fault Properties to Understand Repeatable Earthquakes on Gofar Transform Fault. *Eos*, submitted.

***Warren, J.M.** and L.N. Hansen, 2023. Ductile Deformation of the Lithospheric Mantle. *Annual Reviews of Earth and Planetary Sciences*, 10.1146/annurev-earth-031621-063756.

Kohli, A.H., M. Wolfson-Schwehr, C. Prigent[†], and **J.M. Warren**, 2021. Oceanic transform fault seismicity and slip mode influenced by seawater infiltration, *Nature Geoscience*, 14, 606-611,

- doi:10.1038/s41561-021-00778-1.
- Birner, S.K., E. Cottrell, **J.M. Warren**, K.A. Kelley, and F.A. Davis, 2021. Melt addition to mid-ocean ridge peridotites increases spinel Cr# with no significant effect on recorded oxygen fugacity, *Earth and Planetary Science Letters*, 566, 116951, doi.org/10.1016/j.epsl.2021.116951.
- Patterson, S.N.[†], K.J. Lynn[†], C. Prigent[†], and **J.M. Warren**, 2021. High temperature hydrothermal alteration and amphibole formation in Gakkel Ridge abyssal peridotites, *Lithos*, 392-393, 106107, doi:10.1016/j.lithos.2021.106107.
- Lynn, K.J.[†] and **J.M. Warren**, 2021. The potential for aqueous fluid-rock and silicate melt-rock interactions to re-equilibrate hydrogen in peridotite nominally anhydrous minerals, *American Mineralogist*, 106, 701-714, doi:10.2138/am-2021-7435.
Special Collection: Volatile Elements in Differentiated Planetary Interiors
- Hansen, L.N., M. Faccenda, and **J.M. Warren**, 2021. A review of mechanisms generating seismic anisotropy in the upper mantle, *Physics of the Earth and Planetary Interiors*, 313, 106662, doi:10.1016/j.pepi.2021.106662.
Special Issue: Physical Properties and Observations of the Lithosphere-Asthenosphere System
- Wallis, D., L.N. Hansen, K.M. Kumamoto, C.A. Thom, O. Plümper, M. Ohl, W.B. Durham, D.L. Goldsby, D.E.J. Armstrong, C.D. Meyers, R. Goddard, **J.M. Warren**, T. Breithaupt, M.R. Drury, A.J. Wilkinson, 2020. Dislocation interactions during low-temperature plasticity of olivine strengthen the lithospheric mantle, *Earth and Planet. Sci. Lett.*, 543, 116349, doi:10.1016/j.epsl.2020.116349.
- Prigent, C.[†], **J.M. Warren**, A.H. Kohli, and C. Teyssier, 2020. Fracture-mediated deep seawater flow and mantle hydration on oceanic transform faults, *Earth and Planetary Science Letters*, 532, 115988, doi:10.1016/j.epsl.2019.115988.
- Kohli, A.H.[‡] and **J.M. Warren**, 2020. Evidence for a deep hydrologic cycle on oceanic transform faults, *Journal of Geophysical Research*, 125, e2019JB017751, doi:10.1029/2019JB017751.
- Warren, J.M.**, M.D. Behn, W. Fan, T. Morrow, C. Prigent[†], D.M. Schwartz, J. Andrys[†], M. Bahruth[†], J. Gong, K.-Y. Lin[†], A.T. Gardner, D. Kot, M. Rapa, B. Kelly, and P. A'Hearn, 2019. AT42-20 Cruise Report for the 2019-2021 Gofar Transform Fault Earthquake Prediction Experiment, Leg 1: OBS Deployment and Rock Dredging, *Technical Report*, doi:10.1575/1912/25464.
- Kumamoto, K.M.[†], **J.M. Warren**, and L.N. Hansen, 2019b. Evolution of the Josephine Peridotite shear zones: 2. Influences on olivine CPO evolution, *Journal of Geophysical Research*, 124, 12,763-12,781, doi:10.1029/2019JB017968.
- Kumamoto, K.M.[†], **J.M. Warren**, and E.H. Hauri, 2019a. Evolution of the Josephine Peridotite shear zones: 1. Compositional variation and shear initiation, *Geochemistry, Geophysics, Geosystems*, 20, 5765-5785, doi:10.1029/2019GC008399.
- Nevitt, J.M., **J.M. Warren**, K.M. Kumamoto[†], and D.D. Pollard, 2019. Using geologic structures to constrain constitutive laws not accessible in the laboratory, *Journal of Structural Geology*, 125, 55-63, doi:10.1016/j.jsg.2018.06.006.
- Boneh, Y., E. Schottenfels, K. Kwong, I. van Zelst, X. Tong, M. Eimer, M.S. Miller, L. Moresi, **J.M. Warren**, D.A. Wiens, M. Billen, J. Naliboff, and Z. Zhan, 2019. Intermediate-depth earthquakes controlled by incoming plate hydration along bending-related faults, *Geophysical Research Letters*,

- 46, 3688-3697, doi:10.1029/2018GL081585.
- D'Errico, M.E.[†], M.A. Coble, and **J.M. Warren**, 2019. In situ measurements of lead and other trace elements in abyssal peridotite sulfides, *American Mineralogist*, 104, 190-206, doi:10.2138/am-2019-6516. *Special Collection: Planetary Processes as Revealed by Sulfides and Chalcophile Elements*
- Birner, S.K.[†], E. Cottrell, **J.M. Warren**, K.A. Kelley, and F.A. Davis, 2018. Peridotites and basalts reveal broad congruence between two independent records of mantle f_{O_2} despite local redox heterogeneity, *Earth and Planetary Science Letters*, 494, 172-189, doi:10.1016/j.epsl.2018.04.035.
- Birner, S.K.[†], **J.M. Warren**, E. Cottrell, F.A. Davis, K.A. Kelley, and T.J. Falloon, 2017. Forearc peridotites from Tonga record heterogeneous oxidation of the mantle following subduction initiation, *Journal of Petrology*, 58, 1755-1780, doi:10.1093/petrology/egx072.
- Kumamoto, K.M.[†], C.A. Thom[‡], D. Wallis, L.N. Hansen, D.E.J. Armstrong, **J.M. Warren**, D. Goldsby, and A.J. Wilkinson, 2017b. Size effects resolve discrepancies in 40 years of work on low-temperature plasticity in olivine, *Science Advances*, 3, e1701338, doi:10.1126/sciadv.1701338.
- Nevitt, J.M.[†], **J.M. Warren**, and D.D. Pollard, 2017b. Testing constitutive equations for brittle-ductile deformation associated with faulting in granitic rock, *Journal of Geophysical Research*, 122, 6269-6293, doi:10.1002/2017JB014000.
- Nevitt, J.M.[†], **J.M. Warren**, S. Kidder, and D.D. Pollard, 2017a. Comparison of thermal modeling, microstructural analysis, and Ti-in-quartz thermobarometry to constrain the thermal history of a cooling pluton during deformation in the Mount Abbot Quadrangle, CA, *Geochemistry, Geophysics, Geosystems*, 18, 1270-1297, doi:10.1002/2016GC006655.
- Day, J.M.D., R.J. Walker, and **J.M. Warren**, 2017. ^{186}Os - ^{187}Os and highly siderophile element abundance systematics of the mantle revealed by abyssal peridotites and Os-rich alloys, *Geochimica et Cosmochimica Acta*, 200, 232-254, doi:10.1016/j.gca.2016.12.013.
- Kumamoto, K.M.[†], **J.M. Warren**, and E.H. Hauri, 2017a. New SIMS reference materials for measuring water in upper mantle minerals, *American Mineralogist*, 102, 537-547, doi:10.2138/am-2017-5863.
- Davis, F.A., E. Cottrell, S.K. Birner[†], **J.M. Warren**, and O.G. Lopez, 2017. Revisiting the electron microprobe method of spinel-olivine-orthopyroxene oxybarometry applied to spinel peridotites, *American Mineralogist*, 102, 421-435, doi:10.2138/am-2017-5823.
- Birner, S.K.[†], **J.M. Warren**, E. Cottrell, and F.A. Davis, 2016. Hydrothermal alteration of seafloor peridotites does not influence oxygen fugacity recorded by spinel oxybarometry, *Geology*, 44, 535-538, doi:10.1130/G38113.1.
- Hansen, L.N., C. Qi, and **J.M. Warren**, 2016c. Olivine torsion experiments constrain the nature of the oceanic lithosphere-asthenosphere boundary, *Proceedings of the National Academy of Sciences*, 113, 10503-10506, doi:10.1073/pnas.1608269113.
- Hansen, L.N., C.P. Conrad, Y. Boneh, P.A. Skemer, **J.M. Warren**, and D.L. Kohlstedt, 2016b. Viscous anisotropy of textured olivine aggregates, Part 2: Micromechanical model, *Journal of Geophysical Research*, 121, 7137-7160, doi:10.1002/2016JB013240.
- Hansen, L.N., **J.M. Warren**, M.E. Zimmerman, and D.L. Kohlstedt, 2016a. Viscous anisotropy of tex-

- tured olivine aggregates, Part 1: Measurement of the magnitude and evolution of anisotropy, *Earth and Planetary Science Letters*, 445, 92-103, doi:10.1016/j.epsl.2016.04.008.
- ***Warren, J.M.**, 2016. Global variations in abyssal peridotite compositions, *Lithos*, 248-251, 193-219, doi:10.1016/j.lithos.2015.12.023. *Invited review paper*.
- D'Errico, M.E.[†], **J.M. Warren**, and M. Godard, 2016. Evidence for chemically heterogeneous Arctic mantle beneath the Gakkel Ridge, *Geochimica et Cosmochimica Acta*, 174, 291-312, doi:10.1016/j.gca.2015.11.017.
- Harvey, J., **J.M. Warren**, and S.B. Shirey, 2016. Mantle sulfides and their role in Re-Os-Pb isotope geochronology, *Reviews in Mineralogy and Geochemistry*, 81, 579-649, doi:10.2138/rmg.2016.81.10.
- Hansen, L.N.[†] and **J.M. Warren**, 2015. Quantifying the effect of pyroxene on deformation of peridotite in a natural shear zone, *Journal of Geophysical Research*, 120, 2717-2738, doi:10.1002/2014JB011584.
- Sleep, N.H. and **J.M. Warren**, 2014. Effect of latent heat of freezing on crustal generation at ultraslow spreading rates, *Geochemistry, Geophysics, Geosystems*, 15, 3161-3174, doi:10.1002/2014GC005423.
- Garber, J.M.[‡], S.M. Roeske, **J.M. Warren**, S.R. Mulcahy, W.C. McClelland, L.J. Austin, P.R. Renne, and G.I. Vujovich, 2014. Crustal shortening, exhumation, and strain localization in a collisional orogen: The Bajo Pequeño Shear Zone, Sierra de Pie de Palo, Argentina, *Tectonics*, 33, 1277-1303, doi:10.1002/2013TC003477.
- Warren, J.M.** and E.H. Hauri, 2014. Pyroxenes as tracers of mantle water variations, *Journal of Geophysical Research*, 119, 1851-1881, doi:10.1002/2013JB010328.
- Nevitt, J.M.[†], D.D. Pollard, and **J.M. Warren**, 2014. Evaluation of transtension and transpression within contractional fault steps: Comparing kinematic and mechanical models to field data, *Journal of Structural Geology*, 60, 55-69, doi:10.1016/j.jsg.2013.12.011.
- Blusztajn, J., N. Shimizu, **J.M. Warren**, and H.J.B. Dick, 2014. In-situ Pb isotopic analysis of sulfides in abyssal peridotites from ultraslow spreading ridges: New insights into heterogeneity and evolution of the oceanic upper mantle, *Geology*, 42, 159-162, doi:10.1130/G34966.1.
- Skemer, P.A., **J.M. Warren**, L.N. Hansen[†], G. Hirth, and P.B. Kelemen, 2013. The influence of water and LPO on the initiation and evolution of mantle shear zones, *Earth and Planetary Science Letters*, 375, 222-233, doi:10.1016/j.epsl.2013.05.034.
- Craddock, P.R., **J.M. Warren**, and N. Dauphas, 2013. The chondritic Fe isotopic composition of the Earth, *Earth and Planetary Science Letters*, 365, 63-76, doi:10.1016/j.epsl.2013.01.011. Featured in *Nature News & Views*: Halliday, A.N., 2013. Small differences in sameness, *Nature*, 497, 43-45.
- Warren, J.M.** and S.B. Shirey, 2012. Pb and Os isotopic constraints on the oceanic mantle from single abyssal peridotite sulfides, *Earth and Planetary Science Letters*, 359-360, 279-293, doi:10.1016/j.epsl.2012.09.055.
- Recanati A.[‡], M.D. Kurz, **J.M. Warren**, and J. Curtice, 2012. Helium distribution in a mantle shear zone from the Josephine Peridotite, *Earth and Planetary Science Letters*, 359-360, 161-172, doi:10.1016/j.epsl.2012.09.046.

- Skemer, P.A., **J.M. Warren**, and G. Hirth, 2012. The influence of deformation history on the interpretation of seismic anisotropy, *Geochemistry, Geophysics, Geosystems*, 13, Q03006, doi:10.1029/2011GC003988.
- Suyehiro, K., C. Bertka, D.K. Blackman, B. Ildefonse, P.B. Kelemen, A.J. Mangum, G. Myers, J. Phipps-Morgan, M. Schrenk, Y. Tatsumi, and **J.M. Warren**, 2011. Executive Summary: “Mantle Frontier” Workshop, *Scientific Drilling*, 11, 51-55, doi:10.2204/iodp.sd.11.07.2011.
- Warren, J.M.** and N. Shimizu, 2010. Cryptic variations in abyssal peridotite composition: Evidence for recent melt-rock reaction at the ridge, *Journal of Petrology*, 51(1-2), 395-423, doi:10.1093/petrology/egp096.
- Dick, H.J.B., C.J. Lissenberg, and **J.M. Warren**, 2010. Mantle melting, melt transport, and delivery beneath a slow-spreading ridge: The paleo-MAR from 23°15'N to 23°45'N, *Journal of Petrology*, 51(1-2), 425-467, doi:10.1093/petrology/egp088.
- Skemer, P.A., **J.M. Warren**, P.B. Kelemen, and G. Hirth, 2010. Microstructural and rheological evolution of a mantle shear zone, *Journal of Petrology*, 51(1-2), 55-80, doi:10.1093/petrology/egp057.
- Warren, J.M.**, N. Shimizu, C. Sakaguchi, H.J.B. Dick, and E. Nakamura, 2009. An assessment of mantle heterogeneity based on abyssal peridotite isotopic compositions, *Journal of Geophysical Research*, 114, B12203, doi:10.1029/2008JB006186.
- Kurz, M.D., **J.M. Warren**, and J. Curtice, 2009. Mantle deformation and noble gases: helium and neon in oceanic mylonites, *Chemical Geology* 266, 10-18, doi:10.1016/j.chemgeo.2008.12.018.
- Warren, J.M.**, G. Hirth, and P.B. Kelemen, 2008. Evolution of olivine lattice preferred orientation during simple shear in the mantle, *Earth and Planetary Science Letters*, 272, 501-512, doi:10.1016/j.epsl.2008.03.063.
- Courtier, A.M., M.G. Jackson, J.F. Lawrence, Z. Wang, C.-T.A. Lee, R. Halama, **J.M. Warren**, R. Workman, W. Xu, M.M. Hirschmann, A.M. Larson, S.R. Hart, C. Lithgow-Bertelloni, L. Stixrude, W.-P. Chen, 2007. Correlation of seismic and petrologic thermometers suggests deep thermal anomalies beneath hotspots, *Earth and Planetary Science Letters* 264, 308-316, doi:10.1016/j.epsl.2007.10.003.
- Dantas, C., G. Ceuleneer, M. Gregoire, M. Python, R. Freydier, **J.M. Warren**, and H.J.B. Dick, 2007. Pyroxenites from the Southwest Indian Ridge, 9-16°E: Cumulates from incremental melt fractions produced at the top of a cold melting regime, *Journal of Petrology*, 48(4), 647-660, doi:10.1093/petrology/egl076.
- Warren, J.M.** and G. Hirth, 2006. Grain size sensitive deformation mechanisms in naturally deformed peridotites, *Earth and Planetary Science Letters* 248, 423-435, doi:10.1016/j.epsl.2006.06.006.

GRANTS

- 2020-2024** NSF Petrology & Geochemistry, EAR-1939964: *INTERN supplement for “Evaluating the causes of protracted explosive eruptions at Kilauea Volcano, Hawaii”*; PI: J.M. Warren; \$55,000.
- 2021-2023** NSF Petrology & Geochemistry and Geophysics, EAR-2113408: *Calibrating olivine crystallographic preferred orientation as a mantle water detector*; PI: J.M. Warren; \$317,667.
- 2021-2025** FONDECYT Chile: *Length-scales of chemical, isotopic, and structural heterogeneity in the mantle section of the 6 Ma Taitao ophiolite*; PI: M. Schilling (UACH). Warren is a project collaborator.

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- 2020-2023** NSF Marine Geology & Geophysics, OCE-1832868: *INTERN supplement for “Capturing 4D Variations in Stress, Slip, and Fault-Zone Material Properties”*; PI: J.M. Warren; \$51,431.
- 2020-2023** NSF GeoPRISMS: *Cooperative Institute for Dynamic Earth Research: Fluid and Magma Transport at Plate Boundaries*; PIs: B. Buffett, B. Romanowicz, M. Manga (UC Berkeley). Warren is a member of the workshop organizing committee and contributed to proposal preparation.
- 2020-2024** NSF Petrology & Geochemistry, EAR-1939964: *Evaluating the causes of protracted explosive eruptions at Kilauea Volcano, Hawaii*; PIs: K.J. Lynn and J.M. Warren; \$255,595.
- 2019-2024** NSF: *Research Coordination Network: In-Situ Rock Deformation (ISRDR)*; PI: W. Zhu (U Maryland). Warren is a member of the steering committee and contributed to proposal preparation.
- 2018-2023** NSF Marine Geology & Geophysics, OCE-1832868: *Collaborative Research: Capturing 4D Variations in Stress, Slip, and Fault-Zone Material Properties: The 2019-2021 Gofar Transform Fault Earthquake Prediction Experiment*; PI: J.M. Warren; \$233,808; collaboration with M. Boettcher (University of New Hampshire), E. Roland (Western Washington University), and J.J. McGuire, M.D. Behn, J.A. Collins, W. Fan, C. German (Woods Hole Oceanographic Institution). Multi-institution project with three research cruises and 51 ocean bottom seismometers for a total cost of \$10M.
- 2018-2019** US Science Support Program: *Supplementary Workshop Participation for the New Caledonia Peridotite Amphibious Drilling Workshop*; PI: J.M. Warren, co-PIs: P.B. Kelemen, A. Farough, E.C. Ferré, F. Klein, R. Price, M.O. Schrenk, J.W. Shervais; \$12,000 for participant travel expenses.
- 2015-2018** International Continental Scientific Drilling Program: *Oman Drilling Project*, PI: P.B. Kelemen (Columbia Univ.); co-PIs: J.M. Warren and 36 others; funding for drilling-related operations only.
- 2015** Stanford Nano Shared Facilities Seed Grant: *NanoSIMS technique development of volatile analyses in nominally anhydrous minerals*; PI: J.M. Warren; \$15,120.
- 2014-2018** NSF Marine Geology & Geophysics, OCE-1620276: *Collaborative Research: Upper mantle oxygen fugacity from source to surface*; PI: J.M. Warren; \$189,068; collaboration with E. Cottrell and F.A. Davis (Smithsonian Institution) and K.A. Kelley (University of Rhode Island); \$336,848 total.
- 2014-2018** NSF Tectonics, EAR-1619880: *Collaborative Research: Deformation-induced hydration of peridotite mylonites in nature and experiments*; PI: J.M. Warren; \$243,709; collaboration with C. Teyssier and M. Zimmerman (University of Minnesota); \$385,414 total.
- 2013-2020** NSF Petrology & Geochemistry, Tectonics, and Geophysics; EAR-1255620: *CAREER: Investigating the relationship between mantle shear localization, melt flow and water content*; PI: J.M. Warren; \$550,069.
- 2011-2012** NSF Major Research Instrumentation, EAR-1125782: *MRI: Acquisition of an electron microprobe for research in Earth sciences, materials science, and applied physics*; PI: J. Stebbins, co-PIs: M. Grove, I. Fisher, J.M. Warren, R. Sinclair; \$761,133.
- 2011-2012** France-Stanford Center Seed Fund: *France-Stanford Collaboration in mantle geochemistry and petrology*; PI: J.M. Warren, co-PIs: B. Ildefonse, M. Godard (Université de Montpellier); \$12,100.
- 2010-2012** NSF Petrology & Geochemistry, EAR-0948609: *Noble gas behavior during upper mantle deformation*; PI: M.D. Kurz (WHOI); \$370,541 total, with subcontract for \$61,402 to J.M. Warren.

PRESENTATIONS

Invited seminars (selected):

2022, InterRidge Webinar:

The rock record of creep and earthquakes along oceanic transform faults

2021, Department of Earth Sciences Seminar, University of Cambridge:

The influence of seawater infiltration on oceanic transform fault slip behavior

2021, Cottrell Reading Group, Smithsonian Institution:

Abysal peridotite constraints on lead in the Earth's mantle

2021, Seismo Lab Seminar, California Institute of Technology:

The influence of seawater infiltration on oceanic transform fault seismicity and slip mode

2020, Department of Earth, Environmental and Planetary Sciences Colloquia, Brown University:

The rheology of oceanic transform faults: from mylonites to breccias

2019, Workshop on Mantle Water, Lamont Doherty Earth Observatory:

Current analytical challenges for measuring water in NAMs

2019, Geodynamics Seminar, Lamont Doherty Earth Observatory:

Using fault-zone geology to understand oceanic transform fault earthquakes

2018, Earth and Atmospheric Sciences Seminar Series, Cornell University:

Using fault-zone geology to understand oceanic transform fault seismicity

2018, Solid Earth Brown Bag, Princeton University, NJ:

Using the rock record to understand oceanic transform fault seismicity

2017, Geophysical Laboratory, Carnegie Institution of Washington, DC:

Oceanic upper mantle composition and the evidence for an ultra-refractory reservoir

2017, COG³ Seminar, Massachusetts Institute of Technology, MA:

Linking fault-zone geology, fluid flow and seismicity at oceanic transform faults.

2016, Department of Earth and Planetary Sciences, Washington University in St. Louis, MO:

The role of fluid flow in ductile processes at oceanic transform faults.

2015, Institute of Geophysics and Tectonics, University of Leeds, UK:

Exploring ridge processes using global abyssal peridotites.

2015, Department of Earth Sciences, University of Oxford, UK:

The role of the mantle in oceanic transform fault deformation.

2015 Department of Earth Sciences, Cambridge University, UK:

The interplay between brittle and ductile processes at oceanic transform faults.

2014, Department of Geological Sciences, University of Texas at Austin, TX:

Evolution of Ductile Mantle Shear Zones.

2014, Department of Mineral Sciences, National Museum of Natural History, DC:

The Mantle Beneath Global Seafloor Volcanism.

2013, Department of Earth Sciences, University of California Santa Barbara, CA:

Constraints on mantle evolution from sulfide Pb and Os isotopes.

2013, Department of the Geophysical Sciences, University of Chicago, IL:

Constraints on mantle evolution from abyssal peridotites.

2012, Department of Earth & Planetary Sciences, Harvard University, MA:

Water in the Oceanic Upper Mantle.

2011, Whole Earth Seminar, University of California Santa Cruz, CA:

How Depleted is the Upper Mantle?

Invited conference presentations:

2022, Invited Talk, Workshop on Rheology of Earth's Interior Across Scales, Paris, France:

Fluid-driven phase transformations in shear zones and their influence on lithospheric strength

2020, Keynote, Tectonics Community Science Workshop, Virtual Event:

Constraints from the rock record on shear localization at oceanic transform faults

2018, Invited Talk, American Geophysical Union Fall Meeting, Washington, DC:

- Observations of a complex interplay between melt, water, grain size, and viscous anisotropy during shear localization in the lithospheric mantle.*
- 2018, Keynote, Goldschmidt Conference, Boston, MA:
Source versus process: Peridotite constraints on magma genesis.
- 2017, Invited Talk, Goldschmidt Conference, Paris, France:
Constraints on mantle Pb, Se, and Te behavior from in situ analyses of peridotite sulfides.
- 2017, Lecture, Summer Program, Cooperative Institute for Dynamic Earth Research, Berkeley, CA:
Relating seismic anisotropy to natural mantle samples
- 2017, Keynote, Deformation Mechanisms, Rheology and Tectonics Conference, Inverness, UK:
The role of fluids in the brittle-ductile transition at oceanic transform faults.
- 2016, Keynote, Goldschmidt Conference, Yokohama, Japan:
Reconciling the compositions of ridge basalts and peridotites.
- 2016, Invited Talk, CIDER Community Workshop, Point Reyes, CA:
Using olivine rheology to constrain plate boundaries.
- 2015, Keynote, COMPRES Annual Meeting, Colorado Springs, CO:
Exploring mantle properties using abyssal peridotites.
- 2014, Invited Talk, Gordon Research Conference on Rock Deformation, Andover, NH:
Initiation and Evolution of Ductile Mantle Shear Zones.
- 2013, Keynote, Goldschmidt Conference, Florence, Italy:
Global Abyssal Peridotite Constraints on the Upper Mantle.
- 2011, Invited Talk, Goldschmidt Conference, Prague, Czech Republic:
Mantle heterogeneity constraints from abyssal peridotite sulfide Pb and Os isotopic compositions.
- 2011, Invited Talk, EarthScope Institute on the Lithosphere-Asthenosphere Boundary, Portland, OR:
Global abyssal peridotite constraints on oceanic LAB formation.
- 2009, Invited Talk, American Geophysical Union Fall Meeting, San Francisco, CA:
Causes and Consequences of Mantle Heterogeneity From Observations of Abyssal Peridotites.
- 2008, Invited Talk, Third COE-21 International Symposium, Misasa, Japan:
Magma Genesis at Ultra-Slow Spreading Ridges.
- 2007, Invited Talk, American Geophysical Union Fall Meeting, San Francisco, CA:
Mechanisms of Ductile Shear Localization From Observations of Naturally Deformed Peridotites.

LAND AND SEA FIELD WORK

- 2022 Shore-based science party for *Gofar Leg 3: OBS Recovery and AUV Sentry Dives.*
- 2019 R/V Atlantis: Chief scientist for *The 2019-2021 Gofar Transform Fault Earthquake Prediction Experiment Leg 1: OBS Deployment and Rock Dredging.*
- 2018 Josephine Peridotite and Trinity Ophiolite: Structural and geochemical sampling.
- 2015 Josephine Peridotite, Oregon: Sampling of shear zones A and B.
- 2014 Trinity Ophiolite, California: TLS survey of Kangaroo Lake section.
- 2013 Josephine Peridotite, Oregon: Sampling of Fresno Bench shear zones.
- 2012 Trinity Ophiolite and Josephine Peridotite: Peridotite structural and geochemical sampling.
- 2011 Oman Ophiolite: Sampling of deformed peridotites for noble gas project.
- 2010 Josephine Peridotite, Oregon: Sampling of deformed peridotites for mantle noble gas project.
- 2004 R/V Knorr, with ROV Jason-2 and AUV ABE: *Magnetic and Structural Studies of a Lower Crustal Exposure of Ocean Lithosphere: Kane Megamullion, Mid-Atlantic Ridge 23° 30'N.*
- 2003 Josephine Peridotite, Oregon, and Trinity Ophiolite, California: Peridotite sampling.
- 2003 R/V Melville: *Investigation of the Oblique and Orthogonal Supersegments of the SWIR.*
- 2001 R/V Yokosuka, with DSV Shinkai-6500: *Investigation of Atlantis Bank and the SW Indian Ridge from 56°E to 58°E.*
- 1999 Ardnamurchan, Scotland: Sampling of a contact metamorphic aureole.
- 1998 Apache National Forest, Arizona: Geologic field mapping.

TEACHING

University of Delaware:

GEOL302 *Igneous and Metamorphic Petrology* (UG): Spring 2017, 2019, 2020, 2021, 2022
 GEOL405 *Introduction to Research* (UG): Fall 2018
 GEOL438/639, MAST438 *Marine Plate Tectonics* (UG/G): Fall 2020 (w/ McGeary), 2021, 2022
 GEOL601 *Geological Sciences at Delaware* (G): Fall 2017, 2018; guest lectures 2020-2022
 GEOL666/866 *Special Problem: Ultramafics in the Field* (G): Fall 2018
 GEOL802 *Marine Geology and Geophysics* (G): Fall 2019
 GEOL866 *Special Problem: Geophysical Field Methods* (G): Fall 2019
 GEOL866 *Special Problem: Ocean Island Volcanism* (G): Spring 2021
 UNIV401/402 *Senior Thesis* (UG): AY2019-2020, AY2021-2022

Stanford University:

GES 104 *Introduction to Petrology* (UG): 2011, 2012, 2013, 2015
 GES 190 *Advanced Field Methods: Ultramafics in the Field* (UG/G): 2012, 2014
 GES 209 *Microstructures*, w/ Miller (UG/G): 2011.
 GES 263 *Introduction to Isotope Geochemistry*, Guest lecturer (UG/G): 2011, 2014
 GES 290 *Department Seminar in Geological and Environmental Sciences* (G): 2012, 2013, 2015
 GES 315 *Literature of Structural Geology*, w/ Pollard (G): 2012, 2013, 2014, 2015
 GES 340 *Seminar on the Earth's Interior*, w/ Mao (G): 2011, 2013
 GES 382 *Mantle Geochemistry* (G): 2012

ADVISING

Graduate Students:

Abigail Nalesnik, Ph.D. candidate, 2020-present, University of Delaware
 Melinda Bahruth, Ph.D. candidate, 2018-present, University of Delaware
 Kuan-Yu Lin, Ph.D. candidate, 2018-present, University of Delaware
 Suzanne Birner, Ph.D. 2018, Stanford, Thesis: *Variations in the Oxygen Fugacity of the Upper Mantle*
 Kathryn Kumamoto, Ph.D. 2018, Stanford, Thesis: *Exploring the Rheological Properties of the Upper Mantle: From the Field to the Laboratory*
 Megan D'Errico, Ph.D. 2016, Stanford, Thesis: *Heterogeneity and Depletion of the Mantle Assessed From Abyssal Peridotite Geochemistry*
 Nikolaus Deems, M.S. 2016, Stanford, Thesis: *Deformation history and depth to the brittle-ductile transition for peridotite mylonites from St. Paul Transform Fault, Mid-Atlantic Ridge*
 Johanna Nevitt, Ph.D. 2015, Stanford, co-advised with D. Pollard, Thesis: *Fault-related deformation within the brittle-ductile transition*

Postdocs:

Nadine Grambling, 2022-present
 Kendra Lynn, 2017-2020, now Research Geologist at U.S. Geological Survey
 Cécile Prigent, 2017-2020, now Assistant Professor at Institut de Physique du Globe de Paris
 Lars Hansen, 2012-2013, now Associate Professor at University of Minnesota

Undergraduate Research Advisor:

Janelle Hayward, 2021-2022, UD Winter Fellow
 Natalie Zimmermann, 2019-2020, UD Summer Fellow, Senior Thesis
 Raphael Affinito, 2018-2020, UD Summer & Winter Fellow, Senior Thesis
 Sierra Patterson, 2018, UD Summer Fellow
 EKela Autry, 2015, Stanford Summer Fellow
 Oscar Lopez, 2015, co-advisor for Smithsonian Institution REU

Ph.D. External Examiner: Sophie Cox (Cardiff University, 2021).

Ph.D. Thesis Committees: Ningli Zhao (Brown University, 2021), Emmanuel Codillo (MIT/WHOI Joint Program, 2022).

Ph.D. Thesis Committees (Stanford): Sarah Barrett (2015), Pablo García Del Real (2016), Arjun Kohli (2015; chair), Yingxia Shi (2016), Mary Reagan (2018).

Ph.D. Qualifying Exam Committees (Stanford): Sarah Barrett (2012), Pablo García Del Real (2011), Ryan McCarty (2013), Mary Reagan (2014), Yingxia Shi (2012), Meredith Townsend (2013).

M.S. Committees: Abe Torchinsky (Stanford, 2012), David Sheu (Stanford, 2012), Kate Kaminski (U. Idaho, 2016), Rajani Shrestha (U. Delaware, current), Lazaro Oliva (U. Delaware, current).

Faculty Resource Advisor: Meredith Townsend, DARE Program 2014-2016 (PhD, Stanford, 2017).

Undergraduate Major Advisor: E. Smith (BS, Stanford, 2013).

OUTREACH

- 2022 Presenter, *Teaching with GeoMapApp*, virtual GeoMapApp workshop
- 2022 Presentation, *Being a Geologist*, UD Laboratory School
- 2018 Judge, Outstanding Student Presentation Award, AGU Fall Meeting
- 2018 Presentation, *Preparing CVs and Resumes*, UD Graduate Student Brown Bag
- 2018 *Ocean Rocks!* exhibit, Delaware Coast Day
- 2018 *Ocean Rocks!* outreach event, Smithsonian National Museum of Natural History
- 2018 Terrestrial Laser Scanning Field Module for Geol306
- 2018 Guest professor, Geoscience Theater 3000
- 2017 Judge, Outstanding Student Presentation Award, AGU Fall Meeting
- 2016 Judge, Outstanding Student Presentation Award, AGU Fall Meeting
- 2014 Judge, Outstanding Student Presentation Award, AGU Fall Meeting
- 2014 Class blog for Stanford GES190 Field Class *Ultramafics in the Field*
- 2014 Panelist, Advisor/advisee relationships for new graduate students, Stanford
- 2012 Class blog for Stanford GES190 Field Class *Research in the Field*
- 2012 Panelist, Recruitment Retreat, Stanford Diversity Outreach for Doctoral Education
- 2011 Panelist, *What does it mean to be a scientist?*, Geoscape Workshop for K-12 teachers

UNIVERSITY SERVICE

Service at University of Delaware:

- 2023-present Department of Earth Sciences Promotion & Tenure Committee
- 2022-present EarthScope Consortium, alternate institution member representative
- 2020-present Graduate College Council, alternate representative for CEOE
- 2019-present Graduate Admissions Committee
- 2021-2022 CEOE pod for Unlearning Racism in Geoscience (URGE)
- 2021-2022 Search committee for a department chair and tenure-track faculty member
- 2020 Committee for creating a Department of Earth Sciences code of conduct
- 2017-2019 Earth Sciences Graduate Program Committee
- 2018-2019 Chair, Tenure-Track Geophysics Faculty Search Committee
- 2018-2019 Evaluation committee for Department of Geological Sciences Chair
- 2018 Search committee for CEOE Communications Specialist
- 2017 Geological Sciences Strategic Planning Committee [Chair]

Service at Stanford University:

- 2014-2015 SEES Field Coordinator Search Committee
- 2013-2015 Electron Microprobe Steering Committee
- 2011-2015 Department Seminar Coordinator
- 2010-2015 Undergraduate Field Program Committee [Chair 2014-2015]
- 2010-2012 ICP-MS & Clean Lab Executive Board

PROFESSIONAL SERVICE

Professional Affiliations

- 2002-present **Member**, American Geophysical Union
 2014-present **Member**, Geochemical Society
 2008-present **Member**, Geological Society of Washington
 2002-present **Member**, Mineralogical Society of America

Committees:

- 2020-present **Committee on Solid Earth Geophysics**, National Academy of Sciences
 2023-present **Roebing Medal Selection Committee**, Mineralogical Society of America
 2022-present **Finance Committee**, Geological Society of Washington
 2021-present **Planning Committee**, Petrology and High-T Geochemistry Community (PetroNet)
 2019-present **Steering Committee**, In-Situ Rock Deformation Research Coordination Network
 2021-2022 **Selection Committee**, Established renewed involvement of US in InterRidge
 2017-2022 **Editorial Board**, Lithos
 2017-2020 **Steering & Oversight Committee**, GeoPRISMS
 2013-2015 **Education & Outreach Committee**, DEFORM Consortium
 2011-2016 **Steering Committee**, Physical Properties of Earth Materials (AGU Focus Group)
 2009 **Council Member**, Geological Society of Washington

Workshop convener:

- 2023 **Organizing Committee**, Summer Program, Coop. Inst. for Dynamic Earth Research
 2019 **Organizing Committee**, GeoPRISMS AGU Mini-Workshop: Data, Science, & Education Legacy
 2019 **Organizing Committee**, GeoPRISMS AGU Mini-Workshop: Synthesis and Integration
 2019 **Organizing Committee**, Workshop on Mantle Water
 2019 **Steering Committee**, New Caledonia Peridotite Amphibious Drilling Workshop
 2019 **Organizing Committee**, GeoPRISMS Theoretical and Experimental Institute
 2017 **Organizing Committee**, Summer Program, Coop. Inst. for Dynamic Earth Research

Conference session convener/chair:

- | | | |
|------|--------------------------|-------------------------------------------------------------------------------|
| 2022 | Goldschmidt Conference | <i>Formation and evolution of oceanic and continental lithospheric mantle</i> |
| 2021 | COSEG Fall Event | <i>Panel II moderator: How Are Plates Made and How Do They Evolve?</i> |
| 2021 | Rift-2-Ridge Workshop | <i>Leader of Q&A for day 1 talks</i> |
| 2020 | Goldschmidt Conference | <i>Mantle Formation and Evolution from Lithosphere to Deep Mantle</i> |
| 2020 | ISRDC CHESSE Workshop | <i>In-situ Rock Deformation: Summary and planning forward</i> |
| 2019 | Fluid Transport Modeling | <i>Models for microscopic and short-time-scale mechanisms</i> |
| 2019 | Mantle Water Workshop | <i>Discussion session on SIMS and FTIR measurements</i> |
| 2018 | AGU Fall Meeting | <i>An integrated approach for obs., exp., & models of deformation</i> |
| 2018 | Japan Geoscience Union | <i>The lithosphere and the asthenosphere</i> |
| 2017 | AGU Fall Meeting | <i>PPEM: Transient and steady state rock deformation</i> |
| 2016 | AGU Fall Meeting | <i>Transform plate boundary behavior</i> |
| 2016 | AGU Fall Meeting | <i>PPEM: Rock deformation over various time & spatial scales</i> |
| 2015 | AGU Fall Meeting | <i>Rheology and dynamics of the lithosphere and asthenosphere</i> |
| 2015 | AGU Fall Meeting | <i>Peridotite records of mantle dynamics</i> |
| 2015 | AGU Fall Meeting | <i>Volatile distribution and cycling in the mantle</i> |
| 2015 | AGU Fall Meeting | <i>PPEM: Deformation mechanisms from crystals to plates</i> |
| 2014 | AGU Fall Meeting | <i>PPEM: Evolving rock structure</i> |
| 2014 | Goldschmidt Conference | <i>Oxidation state of the planets</i> |
| 2013 | AGU Fall Meeting | <i>Linking ductile deformation with geochemistry</i> |
| 2012 | Gordon Research Conf. | <i>Failure at high confining pressure II (Discussion Leader)</i> |
| 2011 | AGU Fall Meeting | <i>Volatiles in the Earth's mantle</i> |
| 2011 | AGU Fall Meeting | <i>Integrated studies of oceanic spreading centers</i> |
| 2009 | AGU Fall Meeting | <i>Advances from 30 years of ion microprobe</i> |

Funding Panels

- 2022 **Panelist**, National Science Foundation
 2015-2019 **Grant Committee**, MSA Mineralogy/Petrology Research
 2016 **Panelist**, National Science Foundation
 2014 **Panelist**, National Science Foundation

Proposal reviewer: National Science Foundation; Department of Energy; European Research Council; Fondo Nacional de Desarrollo Científico y Tecnológico Chile; InterRidge.

Manuscript reviewer: Contributions to Mineralogy and Petrology; Earth and Planetary Science Letters; *Geochimica et Cosmochimica Acta*; *Geology*; *Geophysical Research Letters*; *International Geology Review*; *Journal of Geophysical Research*; *Journal of Petrology*; *Lithos*; *Nature*; *Nature Communications*; *Nature Geoscience*; *Reviews in Mineralogy and Geochemistry*; *Tectonophysics*.

Workshop and course participation:

- 2022 The Geological Fingerprints of Slow Earthquakes, Penrose Conference
 2021 Rift-2-Ridge, GeoPRISMS Meeting
 2021 Young Petrology & Geochemistry Pod, Unlearning Racism in Geoscience (URGE)
 2021 Second ISRD-RCN Virtual Science Workshop
 2020 CIG Tectonics Community Science Workshop
 2020 In-Situe Rock Deformation CHESS Workshop
 2020 Bystander Intervention Workshop
 2019 Fluid Transport Modeling Workshop, Modeling Collaboratory for Subduction
 2019 Workshop on Mantle Water
 2019 New Caledonia Peridotite Amphibious Drilling Workshop
 2017 Summer Program, Cooperative Institute for Dynamic Earth Research
 2016 Community Workshop, Cooperative Institute for Dynamic Earth Research
 2014 Workshop on Exploration of the Eastern Pacific Ocean, Ocean Exploration Trust
 2013 Workshop on Ductile Rheology of the Southern California Lithosphere, SCEC
 2012 Workshop on Scientific Drilling in the Samail Ophiolite, Sultanate of Oman
 2012 Building U.S. Strategies for 2013-2023 Scientific Ocean Drilling, IODP
 2010 Reaching the Mantle Frontier Workshop, Deep Carbon Observatory
 2009 MARGINS Volatiles in the Subduction Factory Theoretical & Experimental Institute
 2009 Cooperative Institute for Deep Earth Research Community Workshop
 2006 Summer Program, Cooperative Institute for Deep Earth Research

WHITE PAPERS

- Parnell-Turner, R., **J.M. Warren**, S.J. Sim, Z. Eilon, and L. Montesi, 2021. White paper: U.S. Inter-Ridge Membership, *Rift2Ridge Workshop*.
- Wada, I., L. Karlstrom, D. Arcay, L. Caricchi, P. Fulton, T. Gerya, K. Iacovino, T. Keller, R. Lauer, G. Lotto, L. Montesi, T. Sun, H. Vrijmoed, and **J.M. Warren**, 2019. Modeling Collaboratory for Subduction RCN: Fluid Migration Workshop Report.
- Warren, J.M.**, J.J. McGuire, C.R. German, and J.A. Collins, 2014. White Paper: Hydrothermal circulation search on the Garrett transform fault, East Pacific Rise, *Workshop on Exploration of the Eastern Pacific Ocean*, Ocean Exploration Trust.
- Kelley, K.A., **J.M. Warren**, E. Cottrell, and D. Cardace, 2014. White Paper: Forearc to Arc Transition in the Northern Tonga Trench, *Workshop on Exploration of the Eastern Pacific Ocean*, Ocean Exploration Trust.

CONFERENCE ABSTRACTS

Since 2017 (*invited; †Warren lab member; ‡student collaborating with lab)

- Nalesnik, A.[†], J. Schmith, T. Rose, D.A. Swanson, K.J. Lynn, and **J.M. Warren**, 2023. First grain-size data of Kulanaokuaiki Tephra Units 1, 3, and 5 from explosive eruptions of Kilauea Volcano, HI, USA, *IAVCEI Scientific Assembly*, Rotorua, New Zealand.
- Nalesnik, A.[†], K.J. Lynn, T. Rose, K.-Y. Lin[†], and **J.M. Warren**, 2023. Explosive Eruptions of Kilauea Volcano (HI): Constraints from Glass Chemistry of the Upper-Kulanaokuaiki Tephra, *IAVCEI Scientific Assembly*, Rotorua, New Zealand.
- Behn, M.D, M.S. Boettcher, J.-A. Olive, **J.M. Warren**, and G. Hirth, 2022. A rheologic model for the seismogenic behavior of oceanic transform faults, *AGU Fall Meeting*, Chicago, IL.
- Gong, J., W. Fan, M.S. Boettcher, J.J. McGuire, J.A. Collins, **J.M. Warren**, M.D. Behn, E.C. Roland, C.R. German, and Y. Liu, 2022. Seismotectonics of the Easternmost Segment of Gofar Transform Fault, *AGU Fall Meeting*, Chicago, IL.
- Koenig, P.[‡], E.C. Roland, M.S. Boettcher, **J.M. Warren**, C.R. German, R.L. Evans, A. Gase, W. Fan, J. Gong, Y. Liu, and M. Bahruth[†], 2022. The surface expression of the Gofar oceanic transform fault, East Pacific Rise using newly acquired, 1m-resolution multibeam bathymetry from AUV Sentry, *AGU Fall Meeting*, Chicago, IL.
- Myers, M.L., C. Condit, **J.M. Warren**, R.M. Holder, E.H.G. Cooperdock, V. Guevara, E. Rader, A. Bauer, and E. Mixon, 2022. PETRONET: A petrology and high-temperature geochemistry community built within an antiracist and inclusive framework, *AGU Fall Meeting*, Chicago, IL.
- Condit, C., M.L. Myers, **J.M. Warren**, R.M. Holder, E.H.G. Cooperdock, V. Guevara, E. Rader, A. Bauer, and E. Mixon, 2022. PETRONET: A petrology and high-temperature geochemistry community built within an antiracist and inclusive framework, *Geological Society of America Abstracts with Programs*, 54(5), <https://doi.org/10.1130/abs/2022AM-381164>.
- Moyer, P.A., M.S. Boettcher, J. Gong, W. Fan, J.J. McGuire, **J.M. Warren**, M.D. Behn, J.A. Collins, E.C. Roland, C.R. German, and Y. Liu, 2022. Variations in Earthquake Stress Drop on Gofar Transform Fault at the End of the 2008 and 2020 Seismic Cycles, *Southern California Earthquake Center Annual Meeting*, Palm Springs, CA.
- Birner, S.K., E. Cottrell, **J.M. Warren**, and F.A. Davis, 2022. Heterogeneity in oxygen fugacity recorded by mid-ocean ridge peridotites, it Understanding Oxygen Fugacity in Geoscience International School, Trieste, Italy.
- Lin, K.-Y.[†], **J.M. Warren**, and F.A. Davis, 2022. Evaluating the effects of spreading rate and melt-addition on the closure temperatures recorded by peridotite thermometers, *Goldschmidt Conference*, Honolulu, HI.
- Lynn, K.J., T. Rose, D.C.S. Ruth, D.A. Swanson, and **J.M. Warren**, 2022. Years to decades of pre-eruptive storage recorded by olivine from the basaltic subplinian deposit of Kulanaokuaiki Tephra Unit 3 (900 C.E.), Kilauea Volcano (HI), *Goldschmidt Conference*, Honolulu, HI.
- Nalesnik, A.[†], K.J. Lynn, T. Rose, **J.M. Warren**, and K.-Y. Lin[†], 2022. Glass chemistry of the Kulanaokuaiki Tephra Units 4 and 5 deposited from explosive eruptions of Kilauea Volcano (HI), *Gold-*

schmidt Conference, Honolulu, HI.

- Birner, S.K., E. Cottrell, **J.M. Warren**, K.A. Kelley, and F.A. Davis, 2022. The effects of melt addition on mid-ocean ridge peridotites, *Geological Society of America Abstracts with Programs*, 54(4), doi:10.1130/abs/2022NC-374815.
- Warren, J.M.**, M.S. Boettcher, M.B. Bahruth[†], M.D. Behn, G. Hirth, A.H. Kohli, Y. Liu, P.A. Moyer, C. Prigent[†], E. Roland, M. Wolfson-Schwehr, 2022. Using fault zone samples to understand the slip behavior of oceanic transform faults, *Geological Society of America Penrose Conference on "The geological fingerprints of slow earthquakes"*, Santa Catalina Island, CA.
- Bahruth, M.B.[†], **J.M. Warren**, C. Prigent[†], D.M. Schwartz, J.L. Andrys[‡], K.-Y. Lin[†], M.D. Behn, T.A. Morrow, W. Fan, J. Gong, E. Roland, M.S. Boettcher, Y. Liu, C.R. German, and J.A. Collins, 2021. Aseismic movement of Gofar Transform Fault may be aided by formation of clay-bearing basaltic breccias, *AGU Fall Meeting*, New Orleans, LA.
- Boettcher, M.S., **J.M. Warren**, M.D. Behn, and G. Hirth, 2021. A Synoptic Model for Slip on Mid-Ocean Ridge Transform Faults, *AGU Fall Meeting*, New Orleans, LA.
- *Gong, J., W. Fan, M.S. Boettcher, J.J. McGuire, J.A. Collins, **J.M. Warren**, M.D. Behn, E. Roland, C.R. German, Y. Liu, and T.A. Morrow, 2021. Using microearthquakes to investigate the earthquake preparation process at the Gofar Transform Fault, East Pacific Rise, *AGU Fall Meeting*, New Orleans, LA.
- Kumamoto, K.M., L.N. Hansen, D. Wallis, B.-S. Li, D.E.J. Armstrong, D.L. Goldsby, **J.M. Warren**, and A.J. Wilkinson, 2021. Water does not influence the plasticity of olivine at low temperatures, *AGU Fall Meeting*, New Orleans, LA.
- Lin, K.-Y.[†] and **J.M. Warren**, 2021. Trace element systematics of abyssal peridotite olivine: implications for ridge melting and melt transport, *AGU Fall Meeting*, New Orleans, LA.
- Morrow, T.A., E. Roland, **J.M. Warren**, M.D. Behn, J.A. Collins, W. Fan, J. Gong, C. Prigent[†], D.M. Schwartz, M.B. Bahruth[†], J.L. Andrys[‡], K.-Y. Lin[†], M.S. Boettcher, J.J. McGuire, Y. Liu, and C.R. German, 2021. 4CAST Gofar: New Observations of Structure, Tectonics, Magmatism, and Hydrothermal Activity within the Gofar Transform Fault, *AGU Fall Meeting*, New Orleans, LA.
- Moyer, P.A., M.S. Boettcher, J. Gong, W. Fan, J.J. McGuire, **J.M. Warren**, M.D. Behn, J.A. Collins, E.C. Roland, C.R. German, and Y. Liu, 2021. Variations in Earthquake Stress Drop on Gofar Transform Fault at the End of the 2020 Seismic Cycle, *AGU Fall Meeting*, New Orleans, LA.
- Schwartz, D.M., J.L. Andrys[‡], **J.M. Warren**, M.D. Behn, M.B. Bahruth[†], K.-Y. Lin[†], C. Prigent[†], T.A. Morrow, M.D. Schmitz, and M.S. Boettcher, 2021. Insights into 3 Ma of Mid-Ocean Ridge Mantle Source Heterogeneity from the Gofar Transform Fault, East Pacific Rise, *AGU Fall Meeting*, New Orleans, LA.
- Rowe, M.C., A. Johnson, J. Hammond, S. Wang, R.L. Hervig, and **J.M. Warren**, 2020. Mantle H₂O and δ D associated with melt reactions in a supra-subduction ophiolite, *Goldschmidt Conference*, Virtual.
- Birner, S.K., E. Cottrell, F.A. Davis, **J.M. Warren**, K.A. Kelley, and M. Said, 2019. Thermodynamic and Geochemical Heterogeneity within Mid-Ocean Ridge Peridotites, *AGU Fall Meeting*, V23B-03.

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- Kohli, A.H., C. Prigent[†], M. Wolfson-Schwehr, M.S. Boettcher, and **J.M. Warren**, 2019. Deep hydrothermal circulation on oceanic transform faults controlled by the seismic cycle, *AGU Fall Meeting*.
- Lynn, K.J.[†], **J.M. Warren**, E. Cottrell, S.K. Birner, K.A. Kelley, and C.H. Langmuir, 2019. Gakkal Ridge basalts and peridotites record along-strike variations in f_{O_2} , *AGU Fall Meeting*, V14C-01.
- Rowe, M., A. Johnson, J. Hammond, S. Wang, R. Hervig, and **J.M. Warren**, 2019. Mantle H₂O and δD associated with melt reactions in the upper mantle: Evidence from the Trinity Ophiolite, USA, *AGU Fall Meeting*, V51I-0161.
- Zhao, N.[‡], **J.M. Warren**, K.M. Kumamoto, R.F. Cooper, and G. Hirth, 2019. Constraining the olivine diffusion creep flow law using naturally deformed peridotite, *AGU Fall Meeting*, MR43A-02.
- Affinito, R.A.[†], C. Prigent[†], and **J.M. Warren**, 2019. Feedbacks between focused melt and localized deformation in the Josephine Peridotite, *AGU Virtual Poster Showcase*.
- Boettcher, M.S., P. Moyer, **J.M. Warren**, C. Prigent, and A. Kohli, 2019. Integrating Evidence from Peridotite Mylonites and Earthquake Stress Drops to Understand Slip on Oceanic Transform Faults, *TIGeR Conference: Pathways towards equilibrium in geological systems*, Curtin University, Australia.
- *Kumamoto, K.M.[†], **J.M. Warren**, and E.H. Hauri, 2019. Water, melt, and shear initiation in the Josephine Peridotite, SW Oregon, *Goldschmidt Conference*, Barcelona, Spain.
- *Prigent, C.[†], **J.M. Warren**, and A.H. Kohli, 2019. The effect of fluids on the mechanical and seismic behavior of the 'ductile' lithospheric mantle, *EGU General Assembly*, EGU2019-10920-1.
- Prigent, C.[†], **J.M. Warren**, A.H. Kohli, M. Wolfson-Schwehr, and C.P. Teyssier, 2019. Evidence for deep seawater percolation and mantle hydration on oceanic transform faults, *EGU General Assembly*, EGU2019-10542-2.
- ***Warren, J.M.**, K.M. Kumamoto[†], and E.H. Hauri, 2018. Observations of a complex interplay between melt, water, grain size, and viscous anisotropy during shear localization in the lithospheric mantle, *AGU Fall Meeting*, MR41A-01.
- Lynn, K.J.[†], E. Cottrell, **J.M. Warren**, K.A. Kelley, and C.H. Langmuir, 2018. An Oxidized Signature for the Gakkal Ridge 'Dupal-like' Isotopic Composition, *AGU Fall Meeting*, V11D-0058.
- Patterson, S.N.[†], K.J. Lynn[†], C. Prigent[†], and **J.M. Warren**, 2018. Analysis of Hydrothermal Alteration in Abyssal Peridotites from the Gakkal Ridge, *AGU Fall Meeting*, T33G-0508.
- Prigent, C.[†], **J.M. Warren**, and A.H. Kohli, 2018. The influence of hydrothermal fluid/mantle interaction processes on oceanic transform fault rheology, *Gordon Research Conference on Rock Deformation*.
- Wallis, D., L.N. Hansen, K.M. Kumamoto[†], C. Thom, O. Plümper, D.L. Goldsby, W.B. Durham, D.E.J. Armstrong, R. Goddard, T. Breithaupt, **J.M. Warren**, D.L. Kohlstedt, and A.J. Wilkinson, 2018. Dislocation interactions control the strength of olivine deforming by low-temperature plasticity, *Gordon Research Conference on Rock Deformation*, Andover, NH.
- ***Warren, J.M.**, S.K. Birner[†], E. Cottrell, R.F. Katz, K.A. Kelley, and F.A. Davis, 2018. Source versus process: Peridotite constraints on magma genesis, *Goldschmidt Conference*, Boston, MA.

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- Prigent, C.[†], **J.M. Warren**, and A.H. Kohli, 2018. Mantle deformation and fluid flow on oceanic transform faults, *InterRidge Workshop on Oceanic Transform Faults*, Brest, France.
- Miller, M.S., I. van Zelst, K.B. Kwong, X. Tong, M.O. Eimer, Y. Hu, Y. Boneh, E. Schottenfels, L.N. Moresi, **J.M. Warren**, and D.A. Wiens, 2018. Linking Intermediate Depth Seismicity to Plate-bending Related Faulting, *Asia Oceania Geosciences Society Annual Meeting*, SE32-A018.
- Harvey, J., J.M. Koornneef, **J.M. Warren**, M. Klaver, G.R. Davies, and R.D. Walshaw, 2018. The first Pb paradox and the composition of the sub-continental lithospheric mantle, *EGU General Assembly*, EGU2018-10044.
- van Zelst, I., K.B. Kwong, X. Tong, M.O. Eimer, Y. Hu, Y. Boneh, E. Schottenfels, Z. Zhan, M.S. Miller, L.N. Moresi, **J.M. Warren**, and D.A. Wiens, 2018. Linking intermediate depth seismicity to plate-bending related faulting, *EGU General Assembly*, EGU2018-4520.
- Birner, S.K.[†], F.A. Davis, E. Cottrell, J.M. Warren, and K.A. Kelley, 2017. Subsolidus cooling of mid-ocean ridge peridotites and implications for the oxygen fugacity of the oceanic upper mantle, *AGU Fall Meeting*, V33D-0554.
- Hu, Y., M.R. Guild, S. Naif, M.O. Eimer, O. Evans, K. Fornash, T.A. Plank, D.J. Shillington, F. Vervelidou, **J.M. Warren**, and Douglas Wiens, 2017. A multidisciplinary approach to constrain incoming plate hydration in the Central American Margin, *AGU Fall Meeting*, T23A-0586.
- *Kumamoto, K.M.[†], C.A. Thom, D. Wallis, L.N. Hansen, D.E.J. Armstrong, D.L. Goldsby, **J.M. Warren**, and A.J. Wilkinson, 2017. Size effects in olivine control strength in low-temperature plasticity regime, *AGU Fall Meeting*, U13B-22.
- Kumamoto, K.M.[†] and **J.M. Warren**, 2017. Steady-state LPO is not always reached in high-strain shear zones, *AGU Fall Meeting*, MR43E-01.
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