

Jessica M. Warren - Assistant Professor, University of Delaware

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PROFESSIONAL EXPERIENCE

- 2015-present** Assistant Professor, Geological Sciences, University of Delaware
- 2014-present** Research Associate, National Museum of Natural History, Smithsonian Institution
- 2014-present** Visiting Investigator, Dept. Terrestrial Magnetism, Carnegie Institution for Science
- 2015** Sabbatical Visitor, Department of Earth Sciences, University of Oxford
- 2010-2015** Assistant Professor, Geological & Environmental Sciences, Stanford University
- 2008-2014** Guest Investigator, Geology & Geophysics, Woods Hole Oceanographic Inst.
- 2008-2010** Postdoctoral Fellow, Dept. 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** Grad. Research Assistant, Geology & Geophysics, Woods Hole Oceanographic Inst.

EDUCATION

- 2007** PhD in Geochemistry and Geophysics, MIT/WHOI Joint Program
The Oceanic Upper Mantle: Rheological and Geochemical Constraints
Advisors: Greg Hirth, Nobumichi Shimizu, Henry J. B. Dick
- 2003** MA, Natural Sciences, University of Cambridge
- 2000** MSci, Earth Sciences, University of Cambridge
- 1999** BA, First Class, Natural Sciences Tripos, University of Cambridge

FELLOWSHIPS

- 2012-2015** Frederick E. Terman Fellowship, Stanford University
- 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

GRANTS

- Pending** National Science Foundation: Collaborative Research: Investigating the Links between Fault-Zone Geology, Fluid Flow and Aseismic Deformation at the Garrett Transform Fault; collaboration with J.J. McGuire and C. German, Woods Hole Oceanographic Institution; PI: J.M. Warren; \$333,815. [Submitted 8/2015]
- 2013-2018** National Science Foundation: *CAREER: Investigating the relationship between mantle shear localization, melt flow and water content*; PI: J.M. Warren; \$550,069.
- 2015-2018** International Continental Scientific Drilling Program: *Oman Drilling Project*; PI: P.B. Kelemen; Co-PIs: J.M. Warren and 36 others; funding for drilling-related operations only.
- 2014-2017** National Science Foundation: *Collaborative Research: Upper mantle oxygen fugacity from source to surface*; collaboration with E. Cottrell and F.A. Davis, Smithsonian Institution, and K.A. Kelley, University of Rhode Island; PI: J.M. Warren; \$189,068.
- 2014-2017** National Science Foundation: *Collaborative Research: Deformation-induced hydration of peridotite mylonites in nature and experiments*; collaboration with C. Teyssier and M. Zimmerman, Univ Minnesota; PI: J.M. Warren; \$243,709.
- 2015** Stanford Nano Shared Facilities Seed Grant: NanoSIMS technique development of volatile analyses in nominally anhydrous minerals; PI: J.M. Warren; \$15,120.
- 2011-2012** National Science Foundation: *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 Grant: *France-Stanford Collaboration in mantle geochemistry and petrology*; PI: J.M. Warren; Co-PIs: B. Ildefonse, M. Godard; \$12,100.

2011 Stanford Presidential Grants for Junior Faculty; PI: J.M. Warren; \$10,000.

2010-2012 National Science Foundation: *Noble gas behavior during upper mantle deformation*; PI: M. Kurz (WHOI); \$370,541 (\$61,402 subcontract to J.M. Warren).

PROFESSIONAL ACTIVITIES (LAST 5 YEARS)

Manuscript reviewer: Contributions to Mineralogy and Petrology; Earth and Planetary Science Letters; Geology; Journal of Geophysical Research; Journal of Petrology; Nature; Nature Communications; Nature Geoscience; Reviews in Mineralogy and Geochemistry.

Proposal reviewer: National Science Foundation; Department of Energy; European Research Council; FONDECYT Chile; InterRidge.

2016-present Organizing Committee, CIDER 2017 Summer Program

2015-present Grant Committee, MSA Mineralogy/Petrology Research

2011-present Steering Committee, Physical Properties of Earth Materials (AGU Focus Group)

2013-2015 Education & Outreach Committee, DEFORM Consortium

2016 Panelist, National Science Foundation

2016 Session Convener, AGU Fall Meeting: *Transform Plate Boundary Behavior*

2016 Session Convener, AGU Fall Meeting: *Rock Deformation Over Various Time & Spatial Scales*

2016 Keynote Presentation, Goldschmidt Conference, Yokohama, Japan.

2016 Invited Speaker, CIDER Community Workshop

2016 Invited Speaker, Dept. of Earth and Planetary Sciences, Washington University in St. Louis

2015 Session Convener, AGU Fall Meeting: *Rheology & dynamics of the lithosphere & asthenosphere*

2015 Session Convener, AGU Fall Meeting: *Peridotite records of mantle dynamics*

2015 Session Convener, AGU Fall Meeting: *Volatile distribution and cycling in the mantle*

2015 Session Convener, AGU Fall Meeting: *PPEM: Deformation mechanisms from crystals to plates*

2015 Invited Speaker, Institute of Geophysics and Tectonics, University of Leeds

2015 Invited Speaker, Department of Earth Sciences, University of Oxford

2015 Invited Speaker, Department of Earth Sciences, Cambridge University

2015 Keynote Presentation, COMPRES Annual Meeting, Colorado Springs

2015 Invited Speaker, Department of Geophysics, Stanford University

2014 Panelist, National Science Foundation

2014 Session Convener & Chair, AGU Fall Meeting: *PPEM: Evolving Rock Structure*

2014 Participant, Workshop on Exploration of the Eastern Pacific Ocean, Ocean Exploration Trust

2014 Invited Speaker, Department of Geological Sciences, University of Texas at Austin

2014 Invited Presentation, Gordon Research Conference on Rock Deformation, New Hampshire

2014 Invited Speaker, Department of Mineral Sciences, National Museum of Natural History

2014 Session Convener & Chair, Goldschmidt Conference: *Oxidation State of the Planets*

2013 Session Convener & Chair, AGU Fall Meeting: *Microstructure, Rheology, & Effects of Fluids*

2013 Keynote Presentation, Goldschmidt Conference, Florence, Italy

2013 Participant, SCEC Workshop on Ductile Rheology of the Southern California Lithosphere

2012 Invited Speaker, Department of Earth Sciences, University of Southern California

2012 Invited Speaker, Department of Earth & Planetary Sciences, Harvard University

2012 Participant, Workshop on Scientific Drilling in the Samail Ophiolite, Sultanate of Oman

2012 Discussion Leader, Gordon Research Conference on Rock Deformation

2012 Participant, Workshop on Advancing Experimental Rock Deformation Research

2012 Participant, Building U.S. Strategies for 2013-2023 Scientific Ocean Drilling, IODP

2012 Invited Speaker, Volcano Science Center Seminar, US Geological Survey, Menlo Park

2012 Invited Speaker, Geoclub Seminar, California Institute of Technology

STUDENTS

2012-present Kathryn Kumamoto, Stanford PhD candidate
2012-present Suzanne Birner, Stanford PhD candidate
2016 (Ph.D., Stanford) Megan D'Errico
2016 (M.S., Stanford) Nikolaus Deems
2015 (Ph.D., Stanford) Johanna Nevitt, co-advised with D. Pollard
Stanford Ph.D. Thesis Committees: Sarah Barrett (2015), Pablo García Del Real (2016), Arjun Kohli (2015; chair), Yingxia Shi (2016).
Stanford Qualifying Exam Committees: Sarah Barrett (2012), Pablo García Del Real (2011), Ryan McCarty (2013), Mary Reagan (2014), Yingxia Shi (2012), Meredith Townsend (2013).
M.S. Committees: Kate Kaminski (U. Idaho); Abe Torchinsky (Stanford, 2012); David Sheu (Stanford, 2012).
DARE Faculty Resource Advisor: Meredith Townsend (Stanford, 2014-2015).
Undergraduate Major Advisor: E. Smith (Stanford, 2013).
REU Co-Advisor: O. Lopez (Northwestern U.), REU at Smithsonian Institution (2012); E. Autry, Stanford University (2015).

POSTDOCS

2012-2013 Lars Hansen (now Lecturer & Fellow, University of Oxford)

LAND AND SEA FIELD EXPERIENCE

2015 Josephine Peridotite: Sampling of shear zones A and B.
2014 Trinity Ophiolite: TLS survey of Kangaroo Lake section.
2013 Josephine Peridotite: 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: 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.*

TEACHING (STANFORD)

GES 104 (UG): *Introduction to Petrology*, 2011, 2012, 2013, 2015.
 GES 190 (UG/G): *Advanced Field Methods: Ultramafics in the Field*, 2012, 2014.
 GES 209 (UG/G): *Microstructures*, w/ Miller, 2011.
 GES 263 (UG/G): *Introduction to Isotope Geochemistry*, guest lecturer, 2011, 2014.
 GES 290 (G): *Dept. Seminar in Geological and Environmental Sciences*, 2012, 2013, 2015.
 GES 315 (G): *Literature of Structural Geology*, w/ Pollard, 2012, 2013, 2014, 2015.
 GES 340 (G): *Seminar on the Earth's Interior*, w/ Mao, 2011, 2013.
 GES 382 (G): *Mantle Geochemistry*, 2012.
 EarthSci 1 (UG): *Current Research in Earth Sciences*, guest lecturer, 2010, 2014.

UNIVERSITY SERVICE (STANFORD)

2013-2015 Electron Microprobe Steering Committee
2011-2015 Department Seminar Coordinator
2010-2015 Undergraduate Field Program Committee [Chair]
2011-2012 Geochronology Steering Committee
2010-2012 ICPMS Executive Board

REFEREED PUBLICATIONS

(* indicates student-authored paper)

Day, J.M.D., R.J. Walker, and J.M. Warren. ^{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*, submitted.

Hansen, L.N., C.P. Conrad, Y. Boneh, P. Skemer, **J.M. Warren**, and D.L. Kohlstedt. Viscous anisotropy of textured olivine aggregates, Part 2: Micromechanical model, *Journal of Geophysical Research*, accepted pending minor revisions.

*Kumamoto, K.M., **J.M. Warren**, and E.H. Hauri. New SIMS reference materials for measuring water in upper mantle minerals, *American Mineralogist*, accepted pending minor revisions.

Davis, F.A., E. Cottrell, S.K. Birner, **J.M. Warren**, and O.G. Lopez. Measuring oxygen fugacity recorded by spinel peridotites from Hawaii using spinel-olivine-orthopyroxene oxybarometry: the electron microprobe method revisited, *American Mineralogist*, in press.

Hansen, L.N., C. Qi, and **J.M. Warren**, 2016. Olivine torsion experiments constrain the nature of the oceanic lithosphere-asthenosphere boundary, *Proceedings of the National Academy of Sciences*, in press.

*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., **J.M. Warren**, M.E. Zimmerman, and D.L. Kohlstedt, 2016. Viscous anisotropy of textured 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., **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., **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.

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., **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.

CONFERENCE REPORTS & WHITE PAPERS

- Warren, J.M.**, J. McGuire, C. German, and J. 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.
- McGuire, J., J. Collins, and C. German, **J.M. Warren**, 2014. White Paper: Searching for hydrothermal circulation on the Gofar 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.
- 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.

INVITED CONFERENCE PRESENTATIONS (FIRST-AUTHOR)

- Warren, J.M.**, 2016. [Keynote] Reconciling the compositions of ridge basalts and peridotites, *Goldschmidt Abstracts*, 3375.
- Warren, J.M.**, 2015. [Keynote] Exploring mantle properties using abyssal peridotites, *2015 COM-PRES Annual Meeting*, Colorado Springs, CO.
- Warren, J.M.**, 2014. Initiation and Evolution of Ductile Mantle Shear Zones, *Gordon Research Conference on Rock Deformation*, Andover, NH.
- Warren, J.M.**, 2013. [Keynote] Global Abyssal Peridotite Constraints on the Upper Mantle, *Mineralogical Magazine: Goldschmidt Conference*, 77(5), 2468.

- Warren, J.M.** and Shirey, S.B., 2011. Mantle heterogeneity constraints from abyssal peridotite sulfide Pb and Os isotopic compositions, *Mineralogical Magazine: Goldschmidt Conference*, 75(3), 2133.
- Warren, J.M.**, N. Shimizu, and H.J.B. Dick, 2009. Causes and Consequences of Mantle Heterogeneity From Observations of Abyssal Peridotites, *Eos Trans. AGU*, 90(52), V32A-01.
- Warren, J.M.**, N. Shimizu, and H.J.B. Dick, 2008. Magma Genesis at Ultra-Slow Spreading Ridges, *Third COE-21 International Symposium*, Misasa, Japan.
- Warren, J.M.**, G. Hirth, and P.B. Kelemen, 2007. Mechanisms of Ductile Shear Localization From Observations of Naturally Deformed Peridotites, *Eos Trans. AGU*, 88(52), T43D-02.

CONFERENCE ABSTRACTS

(Last 3 years; *indicates student-authored abstract; †indicates invited abstract)

- Armstrong, D.E.J., K.M. Kumamoto, D. Wallis, S. Roberts, A.J. Wilkinson, **J.M. Warren**, and L.N. Hansen, 2017. Indentation fracture experiments on single crystal olivine from 300K to 1100K, *Minerals, Metals & Materials Society Annual Meeting*, submitted.
- *Birner, S.K., E. Cottrell, **J.M. Warren**, K.A. Kelley, and F.A. Davis, 2016. Records of upper mantle oxygen fugacity gleaned from high-density sampling of basalts and peridotites at ultra-slow ridges, *AGU Fall Meeting*, submitted.
- C.P. Teyssier, M.E. Zimmerman, A.H. Kohli, and **J.M. Warren**, 2016. Fluid-Rock Interaction in Oceanic Transform Faults: Experimental Approach, *AGU Fall Meeting*, submitted.
- Warren, J.M.**, C.P. Teyssier, M.E. Zimmerman, A.H. Kohli, N.J. Deems, F.M. McCubbin, and P. Blisniuk, 2016. Fluid-Rock Interaction in Oceanic Transform Faults: Field Observations, *AGU Fall Meeting*, submitted.
- Kohli, A.H. and **J.M. Warren**, 2016. Geologic constraints on the depth of seawater infiltration along the Shaka Transform Fault, Southwest Indian Ridge, *AGU Fall Meeting*, submitted.
- *Kumamoto, K.M., D. Wallis, L.N. Hansen, D.E.J. Armstrong, A. Wilkinson, and **J.M. Warren**, 2016. Olivine strength in the low-temperature plasticity regime measured via spherical nanoindentation, *AGU Fall Meeting*, submitted.
- *Kumamoto, K.M., **J.M. Warren**, and E.H. Hauri, 2016. New SIMS reference materials for measuring water in upper mantle minerals, *GSA Abstracts with Programs*, submitted.
- *D'Errico, M.E., M. Coble, and **J.M. Warren**, 2016. Measuring Pb in Mantle Sulfides Using In-Situ Techniques, *35th International Geological Congress*, Cape Town, South Africa.
- *D'Errico, M.E., **J.M. Warren**, and M. Coble, 2016. In situ trace element measurements of mantle sulfides by SHRIMP-RG, *4th International HSE Geochemistry Workshop*.
- *Birner, S.K., E. Cottrell, **J.M. Warren**, K.A. Kelley, and F.A. Davis, 2016. Oxygen fugacity of the oceanic upper mantle as recorded by basalts and peridotites from the Southwest Indian Ridge, *Goldschmidt Abstracts*, 238.

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- *Autry, E.A.E., K.M. Kumamoto, and **J.M. Warren**, 2016. Mantle Shear Zone Structure and Microstructure in the Josephine Peridotite, SW Oregon, *Symposia of Undergraduate Research and Public Service*, Stanford, CA.
- †*Birner, S.K., **J.M. Warren**, E. Cottrell, and F.A. Davis, 2015. Heterogeneous Oxidation in Supra-Subduction Settings: Evidence from Forearc Peridotites, *AGU Fall Meeting*, V11D-3086.
- Harvey, J., **J.M. Warren**, M. Humayun, and R.D. Walshaw, 2015. Should I stay or should I go? Siderophile and chalcophile element mobility in mantle-derived sulfides: the effects of weathering, *AGU Fall Meeting*, V53B-3134.
- *Kaminski, K.M., E. Mittelstaedt, **J.M. Warren**, M. Kurz, and K.M. Kumamoto, 2015. Using a numerical model to quantitatively assess dynamic recrystallization as a mechanism for He enrichment in mantle shear zones, *AGU Fall Meeting*, V11B-3071.
- Teysseier, C., V. Chatzaras, A. von der Handt, and **J.M. Warren**, 2015. Feedback between hydration and deformation in an oceanic paleotransform (New Caledonia) from high temperature mylonitization to serpentinitization, *GSA Abstracts with Programs*, 47(7), 291.
- *Kumamoto, K.M., **J.M. Warren**, E.H. Hauri, and C. Hitzman, 2015. Volatiles in Mantle Minerals on the Stanford NanoSIMS, *5th NanoSIMS International Workshop*, Manchester, UK.
- Warren, J.M.**, L.N. Hansen, K.M. Kumamoto, and P. Skemer, 2015. Using naturally deformed peridotites to constrain models of shear localization, *XIV International Workshop on Modeling of Mantle and Lithosphere Dynamics*, Oléron, France.
- *Birner, S.K., **J.M. Warren**, E. Cottrell, and F.A. Davis, 2015. Oxygen fugacity of forearc peridotites from the Tonga Trench: Implications for mantle processes during subduction initiation, *Goldschmidt Abstracts*, 307.
- *D’Errico, M.E., **J.M. Warren**, and M. Coble, 2015. New constraints on sulfides as the main mantle Pb reservoir, *Goldschmidt Abstracts*, 631.
- *Deems, N.J., **J.M. Warren**, and F.M. McCubbin, 2015. Origin of amphibole in peridotite mylonite from an oceanic transform fault, *Goldschmidt Abstracts*, 688.
- *Kumamoto, K.M., **J.M. Warren**, and E.H. Hauri, 2015. New standards for measuring water in the mantle via SIMS, *Goldschmidt Abstracts*, 710.
- Hansen, L.N., C.P. Conrad, **J.M. Warren**, and D.L. Kohlstedt, 2015. Anisotropic viscosity of olivine aggregates: A laboratory, field, and numerical approach, *JpGU Meeting*, SIT04-06.
- Hansen, L.N., C.P. Conrad, **J.M. Warren**, D. Wallis, and D.L. Kohlstedt, 2015. Anisotropic viscosity of olivine aggregates: A laboratory, field, and numerical approach, *Micro-DICE Conference*, Montpellier, France.
- Hansen, L.N., C. Qi, K. Kumamoto, **J.M. Warren**, R. Katz, and D.L. Kohlstedt, 2015. Olivine textural evolution constrains the nature of the lithosphere-asthenosphere boundary, *British Geophysical Association New Advances in Geophysics 2015: The Lithosphere-Asthenosphere System*, London, England.

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- Warren, J.M.** and E.H. Hauri, 2014. Constraints on Mantle Water from Peridotite Pyroxenes, *AGU Fall Meeting*, DI21A-4259.
- *Birner, S.K., **J.M. Warren**, E. Cottrell, and F.A. Davis, 2014. Untangling the history of oceanic peridotites using spinel oxybarometry, *AGU Fall Meeting*, V53B-4863.
- *D'Errico, M.E., **J.M. Warren**, and M. Godard, 2014. Geochemical heterogeneity in the Arctic mantle at Gakkel Ridge, *AGU Fall Meeting*, DI13B-4276.
- *Deems, N., **J.M. Warren**, and M. Wolfson-Schwehr, 2014. Alignment of olivine crystals during diffusion creep in oceanic peridotite mylonites, *AGU Fall Meeting*, T33D-05.
- †*Deems, N., **J.M. Warren**, F.M. McCubbin, and M. Wolfson-Schwehr, 2014. The origin of hydrous minerals in peridotite mylonites from an oceanic transform fault, *AGU Fall Meeting*, T41B-4626.
- Hansen, L.N., C.P. Conrad, **J.M. Warren**, S.I. Natarov, and D.L. Kohlstedt, 2014. Development of anisotropic fabric and associated anisotropic viscosity within lithospheric and asthenospheric Shear Zones, *AGU Fall Meeting*, MR23C-4383.
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