

CURRICULUM VITAE

Karen M. Fischer

Department of Earth, Environmental and Planetary Sciences
Brown University, Providence, Rhode Island 02912 USA

Education

Ph.D. in Geophysics, Massachusetts Institute of Technology, Cambridge, MA, 1989.

Dissertation: *The Morphology and Dynamics of Subducting Lithosphere*.

B.S. in Geology and Geophysics, *summa cum laude*, Yale University, New Haven, CT, 1983.

Professional Appointments

7/19 - present Louis and Elizabeth Scherck Distinguished Professor of Geological Sciences, Brown University
7/02 - 6/19 Professor of Earth, Environmental and Planetary Sciences, Brown University
7/04 - 6/07 Royce Family Professor in Teaching Excellence, Brown University
7/96 - 6/02 Associate Professor of Geological Sciences, Brown University
9/90 - 6/96 Assistant Professor of Geological Sciences, Brown University
2/89 - 9/90 Postdoctoral Fellow, Lamont-Doherty Earth Observatory of Columbia University
11/88 - 1/89 Postdoctoral Associate, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology
9/83 - 10/88 Graduate Research Assistant, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology

Research Focus

Using seismic waves to understand the structure, dynamics and evolution of Earth's interior

Honors

Inge Lehmann Medal, American Geophysical Union - 2023
Meenakshi Narain Excellence in Research Mentoring Award, Brown University - 2023
W. S. Jardetzky Medal, Lamont-Doherty Earth Observatory, Columbia University - 2022
AGU College of Fellows Distinguished Lecturer - 2021 to 2022
Harry Fielding Reid Medal, Seismological Society of America - 2019
NSF EarthScope Lecturer - 2017 to 2018
Beno Gutenberg Lecturer, American Geophysical Union Fall Meeting - 2016
Jack E. Oliver Visiting Professor, Cornell University - 2013 to 2015
Fellow of the American Geophysical Union - 2010
Karen T. Romer Award for Undergraduate Advising and Mentoring, Brown University - 2009
NSF MARGINS Program Distinguished Lecturer - 2006 to 2008
Royce Family Professor in Teaching Excellence, Brown University - 2004 to 2007

Service (Selected)

Profession:

Chair, Gordon Research Conference: Interior of the Earth - 6/23 to present (Co-chair 6/19 to 6/23)

Seismological Society of America Board of Directors - 4/21 to 4/24

NSF Division of Earth Sciences Geophysical Facilities Portfolio Review Committee - 7/20 to 4/21

Board of Directors, IRIS Consortium - 12/15 to 12/18, 12/04 to 12/07

Organizing Committee, EarthScope National Meeting - 8/16 to 5/17

Organizing Committee, EarthScope Synthesis Workshop on the Evolution of the Southern Appalachian Lithosphere - 3/16 to 3/17

Associate Editor, Science Advances - 9/14 to 9/16

Co-chair, Workshop on Future Seismic and Geodetic Facility Needs in the Geosciences - 12/14 to 9/15

Chair, Committee of Visitors, Deep Earth Processes Section, EAR Directorate, GEO Division, National Science Foundation - 1/14 to 10/14

NSF Geosciences Advisory Committee - 3/12 to 12/14

President, Seismology Section, American Geophysical Union - 1/13 to 12/14 (President-elect 7/10 to 12/12; Past President 1/15 to 12/16)

Secretary, Seismology Section, American Geophysical Union - 7/06 to 7/08

American Geophysical Union Ethics Committee - 7/11 to 12/12

American Geophysical Union Grand Challenges Committee - 1/12 to 12/12

American Geophysical Union Lehman Award Committee – 2007 and 2009

National Science Foundation Review Panels for the EarthScope (2006, 2008, 2010), Continental Dynamics (2008, 2009, 2011) and Geophysics (2000-2003) Programs

International Development Seismology Committee, IRIS Consortium -9/06 to 12/11

Co-convener, Geophysical Hazards and Plate Boundary Processes in Central America, Mexico and the Caribbean: A Workshop to Build Seismological Collaboration and Capacity (NSF/USAid) - 1/09 to 11/10

Co-chair, NSF EarthScope Science Plan Workshop and Report - 7/09 to 2/10

Co-convener, MARGINS Theoretical and Experimental Institute: Volatiles in the Subduction Factory - 07/08 to 3/10

Editor, Geochemistry, Geophysics, Geosystems (G³) - 2/03 to 8/05

Review Panel for the Mellon Foundation Career Enhancement Awards for Junior Faculty from Underrepresented Groups - 12/01 to 2/06

Global Seismic Network Committee, IRIS Consortium - 1/04 to 12/04

American Geophysical Union Excellence in Geophysical Education Award Committee - 7/00 to 12/03

Education and Outreach Committee, IRIS Consortium - 12/96 to 12/98

Executive Committee, IRIS Consortium - 12/95 to 12/97

Data Management System Standing Committee, IRIS Consortium - 1/93 to 12/95

Associate Editor, Journal of Geophysical Research (Solid Earth) - 1/92 to 12/95

National Science Foundation Site Review Panel for the Southern California Earthquake Center - 8/96

U. S. Geological Survey NEHRP Proposal Evaluation Panels (1993, 1994, 1997, 1998)

University:

Mentor, Junior Faculty Mentoring Program, Dean of the Faculty Office - 9/15 to present

Workshop on Navigating the NSF Grant System for the Brown Postdoc Council Skills 101 Workshop Series - 3/23

Search Committee for IBES Director - 11/19 to 1/20

Doctoral Education Strategic Planning Committee - 9/12 to 5/13

Search Committee for the Provost - 1/98 to 5/98 and 12/10 to 4/11
Search Committee for the Vice-President for International Affairs - 6/09 to 8/09
Science Advisory Board (Undergrad Science Resource Center and its programs) - 9/07 to 12/12
Advisory Board, Sheridan Center for Teaching and Learning - 7/02 to 7/11 (Chair 7/06 to 7/08)
ADVANCE Steering Committee - 5/06 to 12/11
Chair of Undergraduate Science Education Committee - 9/06 to 9/07
Tenure, Promotions and Appointments Committee (TPAC) - 7/03 to 12/05 (Vice-Chair 9/04 to 7/05, Chair 7/05 to 12/05)
Search Committee for the Dean of the Admissions - 2/05 to 7/05
Search Committee for the Dean of the Faculty - 1/04 to 5/04
Resumed Undergraduate Education Policy and Admissions Committee (RUEPAC) - 7/01 to 7/04 (Chair 7/02 to 7/04)
Committee on the Status of Women - 7/96 to 7/99 (Chair 7/97 to 7/99)
College Curriculum Council - 7/98 to 7/00 (Vice-chair 9/99 to 7/00)
University Benefits Review Committee - 7/92 to 1/99

Department:

PI of Dynamic Earth in the 21st Century, the DEEPS-Leadership Alliance summer undergraduate research program - 1/16 to present (NSF EAR REU since 1/19)
Advisor to Geology-Physics/Math Concentration - 9/90 to 12/19, 7/24 to present
Director of Undergraduate Studies - 7/20 to 12/23
Diversity and Inclusion Action Committee - 1/17 to 12/23
Chair's Advisory Committee - 7/97 to 7/00, 7/04 to 12/05, 7/06 to 12/13, 7/14 to 7/22
Curriculum Committee - 7/94 to 7/97, 7/02 to 7/03, 7/05 to 12/05, 7/08 to 7/09
Numerous search, promotion and mentoring committees

Seismometer Deployments

(All data archived at the IRIS Data Management System)

Missouri to Massachusetts Broadband Seismometer Experiment, U.S. - 1995 to 1996
NOMAD Broadband Seismometer Experiment, northeastern U.S. - 1997 to 1999
Florida to Edmonton Broadband Seismometer Experiment, U.S. and Canada - 2001 to 2002
TUCAN Broadband Seismometer Experiment, Costa Rica and Nicaragua - 2004 to 2006
SESAME Broadband Seismometer Experiment, southeastern U.S. - 2010 to 2014

Teaching

Courses:

2023-2024:

Semester I: EEPS 0220 – Understanding Earth and Environmental Processes (58 students, with Greg Hirth)

2023-2024:

Semester I: EEPS 0220 – Understanding Earth and Environmental Processes (64 students, with Greg Hirth)

Semester II: Sabbatical

2022-2023:

Semester I: EEPS 0220 – Understanding Earth and Environmental Processes (70 students, with Greg Hirth)

Semester II: EEPS 1650 - Earthquake Seismology (5 students)
2021-2022

Semester I: EEPS 0220 - Earth Processes (54 students, with Greg Hirth)

Semester II: EEPS 2920A - Measuring Climate and Environmental Change with Geophysical
Data (13 students, with Colleen Dalton)

Student and Postdoc Research Advising

Ph.D. Students:

Xiaoping Yang ('95)

Matthew Fouch ('99)

Aibing Li ('00, with Don Forsyth)

Chad Hall ('02, Marc Parmentier primary advisor)

Dayanthie Weeraratne ('05, Don Forsyth primary advisor, Marc Parmentier co-advisor)

Sarah Zaranek ('05, Marc Parmentier primary advisor)

Catherine Rychert ('07)

David Abt ('09)

Heather Ford ('13)

Julia MacDougall ('14)

Emily Hopper ('16)

Junlin Hua ('22)

Isabella Gama Dantas ('22)

Hannah Krueger ('23)

Sarah Bowers

Jessica Wen

Masters Students:

Mariela Salas ('09)

Daniel Friedman ('17)

Visiting Ph.D. Students:

Kai-Xun Chen (National Taiwan University, 2018-2019)

Ben Chichester (University of Southampton, 2018)

Post-docs:

Stéphane Rondenay (2001-2003)

Vedran Lekić (2010-2011)

Margarete Jadamec (2011-2014)

Nicholas Mancinelli (2016-2018)

Zachary Eilon (2016-2017)

Eva Golos (2020-2022)

Kai-Xun Chen (2021-2023)

Michael Mann (2022-present)

Brown Senior Theses: Michael Pasyanos ('91); Chad Nelsen ('92); Erich Roth ('93); Morgan Kinniburgh ('93); Eddy Gonzalez ('94); Julia Zaslow ('96), Alexander Stine ('96, with Marc Parmentier), Kristin Soule ('99), Colleen Dalton ('00), Ursula Manners ('00), Margaret

Welsh ('02), Ellen Syracuse ('03), Lindsey Doermann ('04), Elliot Grunewald ('05), Laura Martin ('06), Scott French ('07), Marsella Kachingwe ('11), Jocelyn West ('13), Alec Miller ('13.5), Greg Jordan-Detamore ('14), Adam Gilbert ('16), Camera Ford ('16), Alexandra Kim ('17), Emmanuel Guerzon ('17), Yichen Geng ('19), Samantha Ouertani ('22), Anna Novatney ('23)

Other Undergraduate Research Projects Advised: Mariela Salas (Leadership Alliance Intern), Octavia Crompton, Natacha Meyer, Alexis Walker, Mila Owen, Erika Lopez-Garcia, Jenna Washington (Leadership Alliance Intern, Summer 2016), Joshua McDuffie (Leadership Alliance Intern, Summer 2017), Yichen Geng (UTRA, Summer 2017), Angel Santiago (Leadership Alliance Intern, Summer 2018), Zev Izenberg (UTRA, Summer 2019), Samantha Ouertani (UTRA, Summer 2019), Emily Carrero Mustelier (Leadership Alliance Intern, Summer 2020), Kara Jaramillo (Leadership Alliance Intern, Summer 2020), Grace Ward (Leadership Alliance Intern, Summer 2021), Gabrielle Rose (Leadership Alliance Intern, Summer 2023), Nicolas Valencia (Leadership Alliance Intern, Summer 2024)

Peer-reviewed Publications (112)

* = supervised student or postdoc

- Yang, X., L. Liu, A. S. Goddard, L. Peng, K. M. Fischer, Termination and inversion of cratonic basins caused by lithospheric delamination, *Nature Comm.*, in review.
- *Mann, M. E., K. M. Fischer, J. A. Benowitz, Insights into inherited crustal features and Southern Alaska tectonic history from Sp receiver functions, Synthesis of the seismic structure of the greater Alaska region: Continental lithosphere, *AGU Monograph: Tectonics of Alaska and Western Canada: Insights after EarthScope*, in press.
- Yang, X., *M. E. Mann, K. M. Fischer, M. Jadamec, S. Wei, G. Pavlis, A. Schaeffer, Synthesis of the seismic structure of the greater Alaska region: Continental lithosphere, *AGU Monograph: Tectonics of Alaska and Western Canada: Insights after EarthScope*, in press.
- Pavlis, G., M. Jadamec, *M. E. Mann, X. Yang, A. Schaeffer, S. Wei, K. M. Fischer, Synthesis of the Seismic Structure of the Greater Alaska Region: Subducting Slab Geometry, *AGU Monograph: Tectonics of Alaska and Western Canada: Insights after EarthScope*, in press.
- Jadamec, M., G. Pavlis, X. Yang, K. M. Fischer, S. Wei, *M. E. Mann, A. Schaeffer, Synthesis of the Seismic Structure of the Greater Alaska Region: Geodynamics Implications, *AGU Monograph: Tectonics of Alaska and Western Canada: Insights after EarthScope*, in press.
- *Carrero Mustelier, E., K. M. Fischer, *J. Hua, *I. Gama, P. C. La Femina, M. Higgins, Relationships between upper plate structure, mantle wedge melting and fore-arc sliver transport in the Nicaraguan subduction zone, *The Seismic Record*, 4, 252-258, doi.org/10.1785/0320240026, 2024.
- *Golos, E., B. Brunsvik, Z. Eilon, K. M. Fischer, A new view of shear wavespeed and the lithosphere-asthenosphere boundary in the southwestern United States, *J. Geophys. Res.*, 129, e2024JB029220, doi.org/10.1029/2024JB029220, 2024.
- *Chen, K.-X., D. W. Forsyth, K. M. Fischer, A mid-lithospheric discontinuity detected beneath 155 Ma western Pacific seafloor using Sp receiver functions, *Geophys. Res. Lett.*, 51, e2024GL108347, doi.org:10.1029/2024GL108347, 2024.
- Durand, S., M. Putak Juriček, K. M. Fischer, Hydrous melting and its seismic signature, *Elements*, 20, 241-246, doi: 10.2138/gselements.20.4.241, 2024.
- *Hua, J., K. M. Fischer, T. W. Becker, E. Gazel, G. Hirth, Asthenospheric low velocity zone consistent with globally prevalent partial melting, *Nature Geo.*, 16, 175-181, doi: 10.1038/s41561-022-01116-9, 2023.

- *Hua, J., K. M. Fischer, E. Gazel, E. M. Parmentier, G. Hirth, Long-distance asthenospheric transport of plume-influenced mantle, *Geochem. Geophys. Geosyst.*, 24, e2022GC010605, doi:10.1029/2022GC010605, 2023.
- *Gama, I., K. M. Fischer, C. A. Dalton, Z. Eilon, Variations in lithospheric thickness across the Denali Fault and in northern Alaska, *Geophys Res. Lett.*, 49, e2022GL101256, doi:10.1029/2022GL101256, 2022.
- *Gama, I., K. M. Fischer, *J. Hua, Mapping the lithosphere and asthenosphere beneath Alaska with Sp converted waves, *Geochem. Geophys. Geosyst.*, 23, e2022GC010517, doi:10.1029/2022GC010517, 2022.
- Higgins, M., P. C. La Femina, A. J. Saballos, *S. Ouertani, K. M. Fischer, H. Geirsson, W. Strauch, G. Mattioli, R. Malservisi, Cascading hazards in a migrating forearc-arc system: Earthquake and eruption triggering in Nicaragua, *J. Geophys. Res.*, 127, e2022JB024899, doi: 10.1029/2022JB024899, 2022.
- *Golos, E. M., K. M. Fischer, New insights into lithospheric structure and melting beneath the Colorado Plateau, *Geochem. Geophys. Geosyst.*, 23, e2021GC010252, doi: 10.1029/2021GC010252, 2022.
- *Krueger, H. E., *I. Gama, K. M. Fischer, Global variation in cratonic mid-lithospheric discontinuities from Sp receiver functions, *Geochem. Geophys. Geosyst.*, 22, e2021GC009819, doi: 10.1029/2021GC009819, 2021.
- *Nathan, E., *A. Hariharan, D. Florez, K. M. Fischer, Multi-layer seismic anisotropy beneath Greenland, *Geochem. Geophys. Geosyst.*, 22, e2020GC009512, doi:10.1029/2020GC009512, 2021.
- *Gama, I., K. M. Fischer, Z. Eilon, *H. E. Krueger, C. A. Dalton, L. M. Flesch, Shear-wave velocity structure beneath Alaska from a Bayesian joint inversion of Sp receiver functions and Rayleigh wave phase velocities, *Earth Planet. Sci. Lett.*, 560, 116785, doi: 10.1016/j.epsl.2021.116785, 2021.
- Saha, S., Y. Peng, R. Dasgupta, M. Mookherjee, K. M. Fischer, Assessing the presence of volatile-bearing mineral phases in the cratonic mantle as a possible cause of mid-lithospheric discontinuities, *Earth Planet. Sci. Lett.*, 553, 116602, doi: 10.1016/j.epsl.2020.116602, 2021.
- Fischer, K. M., C. A. Rychert, C. A. Dalton, M. S. Miller, C. Beghein, D. L. Schutt, A comparison of oceanic and continental mantle lithosphere, *Phys. Earth Planet. Int.*, 309, 106600, doi:10.1016/j.pepi.2020.106600, 2020.
- *Hua, J., K. M. Fischer, M. Wu., M., N. A. Blom, New approaches to multifrequency Sp stacking tested in the Anatolian region, *J. Geophys. Res.*, 125, e2020JB020313, doi: 10.1029/2020JB020313, 2020.
- Tao, Z., A. Li, K. M. Fischer, Hotspot signatures at the North American passive margin, *Geology*, 49, doi: 10.1130/G47994.1, 2020.
- *Chen, K.-X., K. M. Fischer, *J. Hua, Y. Gung, Imaging crustal melt beneath northeast Japan with Ps receiver functions, *Earth Planet. Sci. Lett.*, 537, 116173, doi: 10.1016/j.epsl.2020.116173, 2020.
- *Hua, J., K. M. Fischer, N. J. Mancinelli, T. Bao, Imaging with pre-stack migration based on Sp scattering kernels, *Geophys. J. Int.*, 220, 428-449, doi: 10.1093/gji/ggz459, 2019.
- Daniels, C., Z. Peng, Q. Wu, S. Ni, X. Meng, D. Yao, L. Wagner, K. Fischer, The 2014 Mw 4.1 South Carolina earthquake sequence: Aftershock productivity, hypocentral depths, and stress drops, *Seismol. Res. Lett.*, 91, 452-464, doi: 10.1785/0220190034, 2019.
- *Hopper, E. and K. M. Fischer, The changing face of the lithosphere-asthenosphere boundary: Imaging continental scale patterns in upper mantle structure across the contiguous U.S.

- with Sp converted waves, *Geochem. Geophys. Geosyst.*, 19, doi:10.1029/2018GC007476, 2018.
- *Eilon, Z., K. M. Fischer, C. A. Dalton, An adaptive Bayesian inversion for upper mantle structure using surface waves and scattered body waves, *Geophys. J. Int.*, 214, 232–253, doi:10.1093/gji/ggy137, 2018.
- Wagner, L. S., K. M. Fischer, R. Hawman, E. Hopper, D. Howell, The relative roles of inheritance and long-term passive margin lithospheric evolution on the modern structure and tectonic activity in the southeastern United States, *Geosphere*, doi: 10.1130/GES01593.1, 2018.
- Jadamec, M. A., O. Kreylos, B. Chang, K. M. Fischer, and B. M. Yikilmaz, A visual survey of global slab geometries and implications for a three-dimensional subduction paradigm, *Earth and Space Science*, doi:10.1002/2017EA000349, 2018.
- Hu, J., L. Liu, M. Faccenda, Q. Zhou, K. M. Fischer, S. Marshak, C. Lundstrom, Southern hemisphere cratonic root loss due to plume-lithosphere interaction, *Nature Geo.*, 11, 203–210, doi:10.1038/s41561-018-0064-1, 2018.
- Chen, C., H. Gilbert, K. M. Fischer, C. L. Andronicos, G. L. Pavlis, M. W. Hamburger, S. Marshak, T. H. Larson, X. Tang, Lithospheric discontinuities beneath the U.S. Midcontinent - signatures of Proterozoic terrane accretion and failed rifting, *Earth Planet. Sci. Lett.*, 481, 223–235, 10.1016/j.epsl.2017.10.033, 2018.
- *Hua, J., K. M. Fischer, M. K. Savage, The lithosphere-asthenosphere boundary beneath the South Island of New Zealand, *Earth Planet. Sci. Lett.*, 484, 92–102, 10.1016/j.epsl.2017.12.011, 2018.
- *Mancinelli, N. J., K. M. Fischer, The spatial sensitivity of Sp converted waves---Scattered wave kernels and their applications to receiver-function migration and inversion, *Geophys. J. Int.*, 212, 1722–1735, doi: 10.1093/gji/ggx506, 2017.
- *Mancinelli, N. J., K. M. Fischer, C. A. Dalton, How sharp is the cratonic lithosphere-asthenosphere transition?, *Geophys. Res. Lett.*, 43, 10.1002/2017GL074518, 2017.
- *MacDougall, J., M. A. Jadamec, K. M. Fischer, The zone of influence of the subducting slab in the asthenospheric mantle, *J. Geophys. Res.*, 122, 6599–6624, 10.1002/2017JB014445, 2017.
- Lekić, V., K. M. Fischer, Interpreting Sp Receiver Functions, *Geophys. J. Int.*, 210, 874–886, 2017.
- *Hopper, E., K. M. Fischer, L. S. Wagner, R. B. Hawman, Reconstructing the end of the Appalachian Orogeny, *Geology*, 45, 15–18, 10.1130/G38453.1, 2017.
- *Hopper, E., K. M. Fischer, S. Rondenay, R. B. Hawman, L. S. Wagner, Imaging crustal structure beneath the southern Appalachians with wavefield migration, *Geophys. Res. Lett.*, 43, 12,054–12,062, 10.1002/2016GL071005, 2016.
- Parker Jr., E. H., R. B. Hawman, K. M. Fischer, L. S. Wagner, Estimating crustal thickness using SsPmp in regions covered by low-velocity sediments: Imaging the Moho beneath the SESAME array, SE Atlantic Coastal Plain, *Geophys. Res. Lett.*, 43, 9627–9635, 10.1002/2016GL070103, 2016.
- Biryol, C. B., L. S. Wagner, K. M. Fischer, R. B. Hawman, Relationship between observed upper mantle structures and recent tectonic activity across the Southeastern United States, *J. Geophys. Res.*, 121, 10.1002/2015JB012698, 2016.
- *Hopper, E., K. M. Fischer, The meaning of midlithospheric discontinuities: A case study in the northern U.S. craton, *Geochem. Geophys. Geosyst.*, 16, 4057–4083, 10.1002/2015GC006030, 2015.

- Parker Jr., E. H., R. B. Hawman, K. M. Fischer, L. S. Wagner, Constraining lithologic variability along the Alleghanian detachment in the southern Appalachians using passive-source seismology, *Geology*, 43, 431-434, 10.1130/G36517.1, 2015.
- *MacDougall, J. G., K. M. Fischer, D. W. Forsyth, R. B. Hawman, L. S. Wagner, Shallow mantle velocities beneath the southern Appalachians from Pn phases, *Geophys. Res. Lett.*, 42, 10.1002/2014GL062714, 2015.
- Fischer, K. M., Crust and Lithospheric Structure - Seismological Constraints on the Lithosphere-Asthenosphere Boundary. In: Gerald Schubert (editor-in-chief) Treatise on Geophysics, 2nd edition, Oxford: Elsevier, pp. 587-612, 10.1016/B978-0-444-53802-4.00026-9, 2015.
- Abers, G. A., K. M. Fischer, G. Hirth, D. A. Wiens, T. Plank, B. K. Holtzman, C. McCarthy, E. Gazel, Reconciling mantle attenuation-temperature relationships from seismology, petrology, and laboratory measurements, *Geochem. Geophys. Geosys.*, 15, 10.1002/2014GC005444, 2014.
- *MacDougall, J. G., C. Kincaid, S. Szwaja, K. M. Fischer, The impact of slab dip variations, gaps, and rollback on mantle wedge flow: insights from fluids experiments, *Geophys. J. Int.*, 197, 705-730, 10.1093/gji/ggu053, 2014.
- Calixto, F. J., D. Robinson, E. Sandvol, S. Kay, D. Abt, K. Fischer, B. Heit, X. Yuan, D. Comte, P. Alvarado, Shear wave splitting and shear wave splitting tomography of the southern Puna plateau, *Geophys. J. Int.*, 199, 688-699. 10.1093/gji/ggu296, 2014.
- *Ford, H. S., K. M. Fischer, V. Lekić, Localized shear in the deep lithosphere beneath the San Andreas fault system, *Geology*, 42, 295-298, 10.1130/G35128.1, 2014.
- *Hopper, E., *H. A. Ford, K. M. Fischer, V. Lekić, M. J. Fouch, The lithosphere-asthenosphere boundary and the tectonic and magmatic history of the northwestern United States, *Earth. Planet. Sci. Lett.*, 402, 69-81, 10.1016/j.epsl.2013.12.016, 2014.
- *Lekić, V., K. M. Fischer, Contrasting lithospheric signatures across the western United States revealed by Sp receiver functions, *Earth. Planet. Sci. Lett.*, 402, 90-98, 10.1016/j.epsl.2013.11.026, 2014.
- Parker, E. H., R. B. Hawman, K. M. Fischer, L. S. Wagner, Crustal evolution across the southern Appalachians: initial results from the SESAME broadband array, *Geophys. Res. Lett.*, 40, 3853-3857, 10.1002/grl.50761, 2013.
- Harmon, N., *M. Salas de la Cruz, C. A. Rychert, G. A. Abers and K. M. Fischer, Crustal and mantle shear velocity structure of Costa Rica and Nicaragua from ambient noise and teleseismic Rayleigh wave tomography, *Geophys. J. Int.*, 195, 1300-1313, 10.1093/gji/ggt309, 2013.
- *MacDougall, J. M., K. M. Fischer, and M. L. Anderson, Seismic anisotropy above and below the subducting Nazca lithosphere in southern South America, *J. Geophys. Res.*, 117, B12306, 10.1029/2012JB009538, 2012.
- *Lekić, V., *S. W. French, and K. M. Fischer, Lithospheric thinning beneath rifted regions of Southern California, *Science*, 334, 783-787, 10.1126/science.1208898, 2011.
- Yuan, H., B. Romanowicz, K. M. Fischer, and *D. L. Abt, 3-D shear wave radially and azimuthally anisotropic velocity model of the North American upper mantle, *Geophys. J. Int.*, 184, 1237-1260, 10.1111/j.1365-246X.2010.04901.x, 2011.
- *Ford, H. A., K. M. Fischer, *D. L. Abt, Catherine A. Rychert, L. T. Elkins-Tanton, The lithosphere-asthenosphere boundary and cratonic lithospheric layering beneath Australia from Sp wave imaging, *Earth Planet. Sci. Lett.*, 300, 299-310, 10.1016/j.epsl.2010.10.007, 2010.
- *Abt, D. L., K. M. Fischer, *S. W. French, *H. A. Ford, H. Yuan, and B. Romanowicz, North

- American lithospheric discontinuity structure imaged by Ps and Sp receiver functions, *J. Geophys. Res.*, *115*, B09301, 10.1029/2009JB006914, 2010a.
- Fischer, K. M., *H. A. Ford, *D. L. Abt, C. A. Rychert, The lithosphere-asthenosphere boundary, *Ann. Rev. Earth Planet. Sci.*, *38*, 551-575, 10.1146/annurev-earth-040809-152438, 2010.
- Rychert, C. A., P. M. Shearer, K. M. Fischer, Scattered wave imaging of the lithosphere-asthenosphere boundary, *Lithos*, *120*, 173–185, 10.1016/j.lithos.2009.12.006, 2010.
- Till, C. B., L. T. Elkins-Tanton, and K. M. Fischer, A mechanism for low-extent melts at the lithosphere-asthenosphere boundary, *Geochem. Geophys. Geosyst.*, *11*, Q10015, 10.1029/2010GC003234, 2010.
- *Abt, D. L., K. M. Fischer, G. A. Abers, J. M. Protti, V. González, and W. Strauch, Constraints on upper mantle anisotropy surrounding the Cocos Slab from SK(K)S splitting, *J. Geophys. Res.*, *115*, B06316, 10.1029/2009JB006710, 2010b.
- MacKenzie, L. S., G. A. Abers, S. Rondenay, K. M. Fischer, Imaging a steeply dipping subducting slab in southern Central America, *Earth. Planet. Sci. Lett.*, *296*, 459-468, 10.1016/j.epsl.2010.05.033, 2010.
- *French, S.W., L. M. Warren, K. M. Fischer, G. A. Abers, W. Strauch, J. M. Protti, and V. González, Constraints on upper-plate deformation in the Nicaraguan subduction zone from earthquake relocation and directivity analysis, *Geochem. Geophys. Geosyst.*, *11*, Q03S20, 10.1029/2009GC002841, 2010.
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