MICHAEL E. WYSESSION: CURRICULUM VITAE

PRESENT POSITION:

Executive Director, Center for Teaching and Learning
Professor**,** Department of Earth, Environmental, and Planetary Sciences, Campus Box 1169;
Washington University, St. Louis, MO 63130, (314) 935-5625, mwysession@wustl.edu;
http://epsc.wustl.edu/seismology/michael/web/index.html.

HISTORY OF EMPLOYMENT:

Executive Director, Center for Teaching and Learning, 2018-present;
Professor, Washington University, 2015-present;
Associate Professor, Washington University, 1997-2015;
Assistant Professor, Washington University, 1991-1997;
Graduate Assistant and University College Faculty, Northwestern U., 1986-1991;
High School Math and Physics Teacher, Staten Island (N.Y.) Academy, 1984-1986.

DEGREES: Ph.D. (Geophysics), Northwestern U., 1991; Sc.B. (Geophysics), Brown U., 1984.

HONORS:

Geoscience in the Media Award, American Association of Petroleum Geologists, 2021
Spilhaus Grant Award (Inaugural), American Geophysical Union, 2019
Frank Press Public Service Award, Seismological Society of America, 2016.
Northwestern University Distinguished Alumni Award, 2015.
Ambassador Award (Inaugural), American Geophysical Union, 2014.
American Geophysical Union Fellow, 2014.
Missouri Education Service Award, 2013.
NAGT Distinguished Lectureship, 2009.
IRIS/SSA Distinguished Lectureship, 2005.
Distinguished Faculty Award, Washington University, 2000.
St. Louis Science Academy Innovation Award, 1999.
National Science Foundation Presidential Faculty Fellowship, 1997–2002.
Lilly Foundation Teaching Fellowship, 1995.
Kemper Foundation Faculty Award, 1993, 1999.
Packard Foundation Fellowship for Science and Engineering, 1992–1997.
AAAS Mass Media Science and Engineering Fellowship, 1988.

RESEARCH INTERESTS:

My research in seismology has primarily involved the computer modeling and interpretation of seismic data for Earth structure, addressing questions of Earth composition and dynamics. Areas of focus have been core-mantle boundary region structure and dynamics, core structure, physical causes of mantle and crustal attenuation, causes of intraplate volcanism and seismicity, and the forensic identification of seismic sources such as nuclear tests and military operations. My research has been supported by 23 NSF grants, as well as 10 grants from other sources including the Packard, Kemper, Lilly, and Pew Foundations.

FIELD EXPERIMENTS:

I have been PI or Co-PI of four NSF-funded IRIS PASSCAL seismic field deployments:

MACOMO: Investigation of Sources of Intraplate Volcanism Using PASSCAL Broadband Instruments in Madagascar, the Comores, and Mozambique (PIs: M. Wysession, D. Wiens, A. Nyblade), 2010-2016.

SPREE: Superior Province Rifting EarthScope Experiment (PIs: S. van der Lee, D. Jurdy, S. Stein, A. Frederiksen, J. Revenaugh, F. Darbyshire, D. Wiens, and M. Wysession), 2011-2016.

FLED: Florida to Edmonton Broadband Seismic Deployment (PIs: K. Fischer, M. Wysession), 2005-2010.

MOMA: Missouri to Massachusetts Broadband Seismic Deployment (PIs: T. Clarke, K. Fischer, M. Wysession), 1994-1997.

STUDENTS /RESEARCHERS SUPERVISED and CO-SUPERVISED:

Ghassan Al-Eqabi: Post-Doctoral/Research Scientist, 1995 – present.
Patrick Shore: Research Scientist, 1991 – 2020.
An-Ning Zhu: Post-Doctoral Assistant, 6/93 – 5/95.
Saadia Baqer: Post-Doctoral Assistant, 10/97 – 6/02.
Raul Valenzuela Wong: Ph.D., 12/96.
Keith Koper: Ph.D., 8/98.
Jesse Fisher Lawrence: Ph.D., 8/04.
Garrett Euler: Ph.D., 12/12.
Martin Pratt: Ph.D., 2/16
Fenitra Andriampenomanana Ny Ony: Ph.D., 1/18
Tsiriandrimanana Rakotondraibe: Ph.D., 9/21
Daniel Bartz: M.S., 5/15
Arjun Neupane: M.S., 8/17
More than 40 Undergraduate Research Advisees

MEMBERSHIPS:

American Association for the Advancement of Science
American Geophysical Union
Geological Society of America
National Association of Geoscience Teachers
National Earth Science Teachers Association
Seismological Society of America
Sigma Xi

SERVICE TO THE SCIENTIFIC COMMUNITY:

Achieve, Inc.: Organizing Team member of the national K-12 *Next Generation Science Standards* (responsible for Earth and Space Science standards), 2010-2013.

AGI (American Geosciences Institute): Next Generation Science Standards Earth & Space Science advisory board, 2015-2018.

AGU (American Geophysical Union): Editor-in-Chief, *Perspectives of Earth and Space Scientists*, 2018-present; Advisory Board, Position Statements on Education, 2021; Editor, *Geophysical Research Letters* (2009-2015); Co-editor, *The Core Mantle Boundary Region*, AGU Monograph, 1998; Seismology Editor, *Eos*, 1998-1999; Studies of the Earth's Deep Interior Committee (SEDI), 1994-1998 (Chair, 1996-1998); Associate Editor, *Journal of Geophysical Research*, 1994-1996; Associate Editor, *Computational Seismology*, 1992-1994; Co-organizer of AGU meeting sessions: Fall of 1996, 1998, 2000, 2005, 2011, 2012, 2013, 2014.

CIG (Computational Infrastructure for Geodynamics): Co-founder, and CIG Steering Committee, 2003-2004; Seismology Working Group, 2005-2020.

ESLI (Earth Science Literacy Initiative): Chair, 2008-present. Lead author of the *Earth Science Literacy Principles*.

EarthScope: Education and Outreach Committee, 2012-2015; Co-author of the *EarthScope 2010-2020 Science Plan*, 2010; Deep Earth Structure working group, 2008-2011.

GSA (Geological Society of America): Organizer of annual national meeting session: Oct, 2009; Nov, 2015; Sep, 2016; Oct, 2017; Oct, 2018; Oct, 2021.

IRIS (Incorporated Research Institutions for Seismology): Editor of EPO educational animations, 2017; Nominations Committee, 2016: Board of Directors, 2013-2015; Chair, Education & Outreach Comm., 2005-2009; Meetings & Publications Comm., 2005-2009; Membership Comm., 2005-2009; Co-author, Long Range Seismology Plan, 2009; Planning Comm., 2003-2005; Elections Comm., 2003-2004; Legal Affairs Comm., 2004; Secretary, Executive Comm., 1998-2001; Global Seismic Network Comm., 1998; Co-Organizer, Annual Workshop, June, 2002.

Midwest Climate Consortium: Climate Education organizer, 2021–present.

NASA (National Aeronautics and Space Administration): Developer and presenter of geoscience educational workshops for NASA engineers, 2008-2013.

NAGT (National Association of Geoscience Teachers): Advisory Board, Building Strong Geoscience Departments, 2007-2012.

NRC (National Research Council of the National Academies of Science): Vice-Chair, Committee on Seismology and Geodynamics, National Academy of Sciences, 2007-2012; Chair, Earth and Space Science Design Team for the NRC report "*A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas."*

NSF (National Science Foundation): Integrated Earth Science panel, 2015; Cooperative Studies of the Earth's Deep Interior panel, 2015; Mathematics-Geophysics panel, 2005 and 2007; COMPRES panel, 2002.

NSTA (National Science Teachers Association): Reviewer of Session Proposals, 2022-present; Advisory Board, Position Statement on Teaching About Climate Change, 2017-2018.

OTCE (On the Cutting Edge: Professional Development for Geoscience Teachers): Co-PI, 2009-2018; Co-organizers of nine professional development workshops for geoscience faculty members (2007-2015).

Savvas Learning (formerly Pearson Education, formerly Prentice Hall): Author of over 35 science programs and textbooks for elementary school, middle school, high school and college, 2001-present; Consultant for K-12 curriculum development, 2006–present; Professional development for high school science teachers, 2003–present.

SSA (Seismological Society of America): Frank Press Award Selection Committee, 2020, 2021.

The Teaching Company: Author and lecturer for four video courses as part of the "Great Courses" series: *How the Earth Works*, 2008 (48 half-hour lectures); *The World's Greatest Geologic Wonders*, 2013 (36 half-hour lectures); National Geographic Destinations: Polar Explorations, 2014 (3 half-hour lectures); The Science of Energy: Power and Resources Explained, 2016 (24 half-hour lectures).

Television/Radio/Print Media: Scientific host of episodes of the History Channel's "Journey to the Earth's Core" (March, 2011) and "The Unexplained: Geologic Phenomena" (May, 2019; Sep, 2022; Oct, 2022). Frequent commentator/interviewee on local and national TV/radio/internet news programs (>60 appearances) and print media (>100 appearances) concerning both my research in earthquakes/seismology and other geoscience topics.

Public Outreach: More than 650 public lectures at teachers' meetings, museums, colleges, and other informal education venues on geoscience topics that include natural hazards, natural resources, human impacts on the earth, climate change, and science literacy.

COURSES TAUGHT OR CO-TAUGHT AT WASHINGTON UNIVERSITY:

Advanced Seismology (561), Critical Earth Issues (203), Earth and the Environment (201), Earth Forces (352), Energy and the Environment (219), Epic of Evolution (210), Evolution of the Earth (200), Geodynamics (559), Geophysics Seminar (595), How the Earth Works (MLA559), Introduction to Geophysics (450), Introduction to Seismology (452), Interior of the Earth (453), Physical Geology (119), Ring of Fire: Earthquakes, Volcanoes, and Plate Tectonics (130).

SERVICE TO WASHINGTON UNIVERSITY:

University (Current):

Committee on Educational Development and Training, 2021 – present (Chair).
IT Teaching and Learning-PLUS Committee, 2020 – 2021 (Chair).
IT Teaching and Learning Committee, 2020-present (Chair).
University Operations Committee, 2020 – present.
STEM-HLC Quality Initiative Project, 2019 – present.
WUCCP Energy Curricular Pathway, 2019 - present (Chair).
MyDay Steering Committee, 2019 – present.
CIRTL university representative, 2019 – present.
Reinvention Collaborative university representative, 2019 – present.
Standing Committee on Facilitating Inclusive Classrooms, 2018 – present.
Canvas Data Management Committee, 2019 - present.
Canvas Post Project Governance Committee, 2019 - present.
Kaltura Project Status Committee, 2019 - present.
IT Infrastructure (Medical Campus) Committee, 2018 – present.
Center for Teaching and Learning, 2018 – present (Executive Director).
Washington University Climate Change Program, Steering Committee, 2017 – present.

University (Past):

Future of Instruction Task Force, 2021 (Co-Chair).
Working Group for Undergraduate Education, University Strategic Planning, 2021.
University Library Committee, 2018 – 2020.
Undergraduate Council, 2018 – 2019.
University Online Education Committee, 2014 – 2019.
Canvas Steering Committee, 2018 – 2019.
Improving the Undergraduate Experience Committee, 2017 – 2018.
Freedom of Expression on Campus Committee, Co-Chair of Education and Professional Development Team, 2018 – 2019.
University IT Teaching and Learning Committee, 2016 – 2019.
University Policy and Practice Affecting Students with Disabilities Committee, 2018 – 2019.
University Conflict of Interest/Disclosure Review Committee, 2009 – 2018.
Frankenstein Bicentennial Planning Committee, 2017 – 2018.

University Semester Online, Course development and instruction, Earth's Critical Issues, 2013 – 2014.
University Open Access Committee, 2009 – 2013.
University Speakers' Bureau, 2004-2006, 2010 – 2011.
University Cluster Convener for clusters CL1600, 1777, 1801, 2002 – 2011.
University Discrimination and Title IX Grievance Committee, 2004 – 2009.
University Undergraduate Teacher Preparation Board, 1998 – 2007.
University Four-Year Undergraduate Advisor, 1999 – 2004.
University Supercomputer Advisory Committee, 1999 – 2003.
University's First Resident Faculty Fellow, 1998 – 2001.
University Residential College Associates Team, 1998 – 2001.
University Special Major Committee, 1997 – 1999.
University Undergraduate Council, 1997 – 1999.
University Undergraduate Council (Steering Committee), 1998 – 1999.
Chair, University UC Information Dissemination Committee, 1998 – 1999.
University Disabled Students Committee, 1997.
University Natural Sciences Curriculum Committee, 1996 – 1997.
University Witherspoon Search Committee, 1996.
University Undergraduate Brochure Committee, 1996.
University Course Evaluation Task Force, 1995.
University Mathematics Task Force, 1995.
University Freshman Advisor; 1992-1993.
University Compton Scholar Selection Committee; 1992 – 1993.
University Secondary Education Certification Evaluation Committee, 1992-1993.

Arts and Sciences (Current):

A&S "Pillar Champion" for the "Forge Connections Between Academy and Society" pillar of the Strategic Plan, 2022 – present.
NSF Graduate Research Fellowship Mentoring Program, 2017 – present.

Arts and Sciences (Past):

A&S Curriculum Review Committee, 2018 – 2021.
Compton-Ferguson Science Lecture Series Planning Committee, 2016 – 2020.
Academic Planning Committee, 2013 – 2015.
Faculty Council, 2012 – 2015. (Chair, 2013-2014, Spring 2015)

Department (Current):

EPS Strategic Communications, 2020 – present.
EPS Pew Midstates Consortium Representative, 1991- present.

Department (Past):

EPS Graduate Student Recruiting Committee, 1998 - 2001 (Chair); 2006 – 2018 (Chair).
EPS Graduate Studies Committee, 2010 – 2018.
EPS Undergraduate Major Advisor, 2014 – 2017.
EPS Undergraduate Program Development and Advising Committee, 1991 – 2010 (Chair, 1991 – 1997).
EPS Computers and Data Management Committee, 2001 – 2005.

EPS Graduate Student Advisor, 2004 – 2005.
EPS Curriculum and Teaching Committee Member, 1991 – 2010.
EPS Departmental Undergraduate Advisor, 1991 – 1997.
EPS United Way Representative, 1991 – 1993.
Faculty Representative to the Graduate Council, 1992 – 1993.
EPS Tolman Fellowship Development, 1992.

PEER-REVIEWED SCIENCE ARTICLES:

Kuo, B. Y., D. W. Forsyth and M. E. Wysession, Lateral heterogeneity and azimuthal anisotropy in the North Atlantic determined from *SS-S* differential travel times, *J. Geophys. Res., 92*, 6421-6436, 1987.

Wysession, M. E. and E. A. Okal, Regional analysis of D″ velocities from the ray parameters of diffracted *P* profiles, *Geophys. Res. Lett., 16*, 1417-1420, 1989.

Wysession, M. E., E. A. Okal and K. L. Miller, Intraplate seismicity of the Pacific Basin, 1913-1988, *Pure Appl. Geophys., 135*, 261-359, 1991.

Wysession, M. E., E. A. Okal and C. R. Bina, The structure of the core-mantle boundary from diffracted waves, *J. Geophys. Res., 97*, 8749-8764, 1992.

Valenzuela, R. W., and M. E. Wysession, Intraplate earthquakes in the Southwest Pacific Ocean Basin and the seismotectonics of the Southern Tasman Sea, *Geophys. Res. Lett., 20,* 2467-2470, 1993.

Wysession, M. E., L. Bartkó, and J. Wilson, Mapping the lowermost mantle using core-reflected shear waves, *J. Geophys. Res., 99*, 13,667-13,684, 1994.

Wysession. M. E., and P. Shore, Visualization of whole mantle propagation of seismic shear energy using normal mode summation, *Pure Appl. Geophys., 142*, 295-310, 1994.

Wysession, M. E., J. Wilson, L. Bartkó, and R. Sakata, Intraplate seismicity in the Atlantic Ocean Basin: a teleseismic catalog, Bull. *Seismol. Soc. Am., 85,* 755-774, 1995.

Wysession, M. E., R. W. Valenzuela, L. Bartkó, A.-N. Zhu, Investigating the base of the mantle using differential travel times, *Phys. Earth Planet. Int., 92*, 67-84, 1995.

Wysession, M. E., L. Bartkó, and J. Wilson, Correction to "Mapping the lowermost mantle using core-reflected shear waves", *J. Geophys. Res., 100*, 8351, 1995.

Wysession, M. E., Large-scale structure at the core-mantle boundary from core-diffracted waves, *Nature, 382,* 244-248, 1996, DOI: 10.1038/382244a0.

Wysession, M. E., How well do we utilize global seismicity?, *Bull. Seismol. Soc. Am., 86*, 1207-1219, 1996.

Wysession, M. E., K. M. Fischer, T. J. Clarke, G. I. Al-eqabi, M. J. Fouch, L. A. Salvati, P. J. Shore, R. W. Valenzuela, Slicing into the Earth: Seismic mapping with the Missouri-to-Massachusetts broadband deployment, *EOS, 77*, 477, 480-482, 1996.

Zhu, A.-N., and M. E. Wysession, Mapping global D″ *P* velocity structure from ISC *PcP-P* differential travel times, *Phys. Earth Planet. Int., 99,* 69-82, 1997.

Wiens, D. A., H. J. Gilbert, P. J. Shore, B. C. Hicks, and M. E. Wysession, Aftershock sequences of moderate-sized intermediate and deep earthquakes in the Tonga subduction zone, *Geophys. Res. Lett., 24*, 2059-2062, 1997.

Li, A., K. M. Fischer, M. E. Wysession, and T. J. Clarke, Mantle discontinuities and temperature under the North American continental keel, *Nature, 395*, 160-163, 1998.

Wiens, D. A., M. E. Wysession, and L. Lawver, Recent Oceanic Intraplate earthquake in Balleny Sea was largest ever detected, *Eos, 79*, 353-354, 1998.

Wysession, M. E., A. Langenhorst, K. M. Fischer, G. I. Al-eqabi, P. J. Shore, M. J. Fouch, and T. J. Clarke, Mantle flow inferred from lateral variations in compressional/shear velocities at the base of the mantle, *Science, 284*, 120-125, 1999, DOI: 10.1126/science.284.5411.120

Koper, K. D., M. E. Wysession, and D. A. Wiens, Multimodal function optimization with a niching genetic algorithm: A seismological example, *Bull. Seis. Soc. Am., 89*, 978-988, 1999.

Valenzuela, R. W., M. E. Wysession, M. O. Neustadt, and J. L. Butler, Lateral variations at the base of the mantle from profiles of digital *Sdiff* data, *J. Geophys. Res., 105*, 6201-6220, 2000.

Fouch, M. J. K. M. Fischer, E. M. Parmentier, M. E. Wysession, T. J. Clarke, Shear wave splitting, continental keels, and patterns of mantle flow, *J. Geophys. Res., 105*, 6255-6276, 2000.

Al-eqabi, G. I., K. Koper, and M. E. Wysession, Source characterization of Nevada test site explosions and western United States earthquakes using Lg waves, with implications for regional discrimination, *Bull. Seis. Soc. Am., 91*, 140-153, 2001.

Wysession, M. E., K. M. Fischer, G. I. Al-eqabi, P. J. Shore, and I. Gurari, Using MOMA broadband array *ScS-S* data to image smaller-scale structures at the base of the mantle, *Geophys. Res. Lett., 28*, 867-870, 2001.

Fouch, M. J., K. M. Fischer, and M. E. Wysession, Lowermost mantle anisotropy beneath the Pacific: Imaging the source of the Hawai`ian plume, *Earth Planet. Sci. Lett., 190*, 167-180, 2001.

Li, A., K. M. Fischer, S. van der Lee, and M. E. Wysession, Crust and upper mantle discontinuity structure beneath eastern North America, *J. Geophys. Res., 107*, No. B5, 10.1029/2001JB000190, 2002.

Fisher, J. L., M. E. Wysession, K. M. Fischer, Small-scale lateral variations in D" attenuation and velocity structure, *Geophys. Res. Lett., 30*,10.1029/2002GL016179, 26 April 2003.

Lawrence, J. F., and M. E. Wysession, QLM9: A new radial quality factor (Q) model for the mantle, *Earth Planet. Sci. Lett.,* 241, 962-971, 2006a.

Aleqabi, G. I., and M. E. Wysession*, Q(Lg)* distribution in the Basin and Range province of the Western United States, *Bull. Seismol. Soc. Am*., 96, 348-354, 2006.

French, S. W., K. M. Fischer, E. M. Syracuse, and M. E. Wysession, Crustal structure beneath the Florida-to-Edmonton broadband seismometer array, *Geophys. Res. Lett., 36*, L08309, doi:10.1029/2008GL036331, 2009.

Cowsik, R., T. Madziwa-Nussinov, K. Wagoner, D. Wiens, and M. Wysession, Performance Characteristics of a Rotational Seismometer for Near-Field and Engineering Applications, *Bull. Seismol. Soc. Am., 99 (2B),* 1181-1189, 2009.

Wolin, E. S. van der Lee, T. A. Bollman, D. A. Wiens, J. Revenaugh, F. A. Darbyshire, A. W. Frederiksen, S. Stein, and M. E. Wysession, Seasonal and diurnal variations in long-period noise at SPREE stations: the influence of soil characteristics on shallow stations' performance, *Bull. Seismol. Soc. Am*., v. 105, p. 2433-2452, doi:10.1785/0120150046, October 2015.

Aleqabi, G., M. E. Wysession, and H. Ghalib, Characterization of Seismic Sources of Military Operations in Urban Terrain (MOUT): Examples from Baghdad, *Bull. Seismol. Soc. Am*, 106(1), 23-42, doi:10.1785/012014187, 2016.

Aleqabi, G., M. E. Wysession, and H. Ghalib, Seismic crustal and upper mantle structure of Iraq and sourrounding regions inferred from regional waveform inversions, *J. of Zankoy Sulaimani,* Special Issue on GeoKurdistan II, 445-458, doi:10.17656/jzs.10496, 2016.

Ola, O., A. W. Fredriksen, T. Bollman, S. van der Lee, F. Darbyshire, E. Wolin, J. Revenaugh, C. Stein, S. Stein, and M. E. Wysession, Anisotropic zonation in the lithosphere of Central North America: Influence on the Mid-Continent Rift, *Tectonophysics*, *683(30),* 367-381, doi: 10.1016/j.tecto.2016.06.031, 2016.

Stein, S., E. Brown, F. Darbyshire, A. Frederiksen, D. Jurdy, J. Kley, R. Moucha, C. A. Stein, T. Rooney, D. Wiens, and M. E. Wysession, New insights into North America's Midcontinent Rift, *Eos*, *97*, doi:10.1029/2016EO056659. Published on 04 August 2016.

Zhang, H., S. van der Lee, E. Wolin, T. A. Bollmann, J. Revenaugh, D. A. Wiens, A. W. Frederiksen, F. A. Darbyshire, G. I. Aleqabi, M. E. Wysession, S. Stein, and D. Jurdy, Distinct crustal structure of the North America Mid-Continent Rift from P-wave receiver functions, *J. Geophys. Res. Solid Earth*, 121, 8136–8153, doi:10.1002/2016JB013244, 2016.

Pratt, M. J., M. E. Wysession, D. A. Wiens, A. Nyblade, G. I. Aleqabi, P. J. Shore, G. Rambolamana, F. Sy Tanjona Andriampenomanana, T. Rakotondraibe, Shear-velocity structure of the crust and upper mantle of Madagascar derived from surface wave tomography, *Earth Planet. Sci. Lett., 458,* 405-417, doi:10.1016/j.epsl.2016.10.041, 2017.

Andriampenomanana, F., A. A. Nyblade, M. E. Wysession, R. Durrheim, G. Rambolamanana, F. Tilmann, G. I. Aleqabi, P. J. Shore, M. J. Pratt, F., Rakotondraibe, T., R. D. Tucker, J. Julia, The structure of the crust and uppermost mantle beneath Madagascar, *Geophys. J. Int*., 210, 1525-1544, doi:10.1093/gji/ggx243, 2017.

Euler, G. G., and M. E., Wysession, Geographic Variations in Lowermost Mantle Structure from the Ray Parameter and Decay Constant of Core-Diffracted Waves, *J. Geophys. Res. Solid Earth*, 122, doi:10.1002/2017JB013930, 2017.

Stein, S., C. A. Stein, R. Elling, J. Kley, G. R. Keller, M. E. Wysession, T. Rooney, A. Frederiksen, and R. Moucha, Insights from North America's Failed Midcontinent Rift into the evolution of continental rifts and passive continental margins, Tectonophysics, 744, 403-421, doi.org/10.1016/j.tecto.2018.07.021, 2018.

Dreiling, J., F. Tilmann, X. Yuan, J. Giese, E. Rindraharisaona, G. Rumpker, G. Barruol, and M. E. Wysession, Crustal radial anisotropy and linkage to geodynamical processes – a study based on seismic ambient noise in southern Madagascar, 123(6), *J. Geophys. Res*., DOI:10.1029/2017JB015273, 2018.

Ramirez, C., A. Nyblade, M. E. Wysession, M. J. Pratt, F. Andriampenomanana, and T. Rakotondraibe, Complex seismic anisotropy in Madagascar revealed by shear-wave splitting measurements, *Earth Planet. Sci. Lett*., 215, 1718-1727, doi: 10.1093/gji/ggy367, 2018.

Bollmann, T. A., S. van der Lee, A. W. Frederiksen, E. Wolin, J. Revenaugh, D. A. Wiens, F. A. Darbyshire, S. Stein, M. E. Wysession, and D. Jurdy, P-wave Teleseismic Traveltime Tomography of the North American Midcontinent, *J. Geophys. Res*., 124, 1725-1742, 10.1029/2018JB016627, 2019.

Andriampenomanana, F., A. A. Nyblade, M. E. Wysession, R. Durrheim, F. Tilmann, G. Barruol, M. J. Pratt, G. Rambolamanana, and T. Rakotondraibe, Seismic velocity and

anisotropy of the uppermost mantle of Madagascar from Pn tomography, *Geophys. J. Int*., 224, 290-305, doi: 10.1093/gji/ggaa458, 2020.

Rakotondraibe, T., A. A. Nyblade, M. E. Wysession, R. Durrheim, G. Rambolamanana, G. I. Aleqabi, P. J. Shore, M. J. Pratt, F. Andriampenomanana, G. Rumpker, and E. Rindraharisaona, Seismicity and seismotectonics of Madagascar revealed by the 2011-2013 island-wide MACOMO broadband seismic network, *Tectonophysics*, 790, 25 June 2020, DOI: 10.1016/j.tecto.2020.228547, 2020.

Aleqabi, G. I., M. E. Wysession, D. A. Wiens, W. Shen, S. van der Lee, F. A. Darbyshire, A. W. Fredriksen, D. Jurdy, J. Revenaugh, and S. Stein, High-resolution 3-D crustal structure of the Midcontinent Rift from receiver functions and surface-wave imaging, J. Geophys. Res., in preparation, 2022.

Wysession, M. E., D. Bartz, D. A. Wiens, G. I. Aleqabi, P. Shore, S. van der Lee, D. Jurdy, S. A. Stein, J. Revenaugh, E. Wolin, T. A. Bollmann, A. W. Frederiksen, and F. A. Darbyshire, Assessing the microseismicity of the Northern Mid-Continent Rift Zone and Surrounding Regions, *Bull. Seismol. Soc. Am*., in preparation, 2022.

Wysession, M. E., M. J. Pratt, F., Andriampenomanana, F., Rakotondraibe, A. A. Nyblade, R. Durrheim, G. Rambolamanana, G. I. Aleqabi, P. J. Shore, T., R. D. Tucker, Seismic studies of the lithosphere of Madagascar, *Tectonics*, in preparation, 2022. (Invited)

PEER-REVIEWED SCIENCE CHAPTERS IN EDITED VOLUMES:

Wysession, M. E., and E. A. Okal, Evidence for lateral heterogeneity at the core-mantle boundary from the slowness of diffracted *S* profiles, in *Structure and Dynamics of Earth's Deep Interior*, Geophys. Monogr. Ser., Vol. 46, edited by D. E. Smylie and R. Hide, pp. 55-63, AGU, Washington, D. C., 1988.

Wysession, M. E., C. R. Bina and E. A. Okal, Constraints on the temperature and composition of the base of the mantle, in *Dynamics of the Earth's Deep Interior and Earth Rotation*, Geophys. Monogr. Ser., edited by J.-L. LeMoüel et al., AGU, Washington, D.C., 181-190, 1993.

Wysession, M. E., Imaging cold rock at the base of the mantle: The sometimes fate of Slabs?, in *Subduction: Top to Bottom*, edited by G. E. Bebout, D. Scholl, S. Kirby, and J. P. Platt, AGU, Washington, D. C., pp. 369-384, 1996.

Valenzuela, R. W., and M. E. Wysession, Lateral and radial velocity structure of the lowermost mantle from diffracted shear waves, in *New Images of the Earth's Interior through Long-term Ocean-floor Observations*, ed. by Y. Fukao, Y. Hamono, K. Suyehiro, and R. Geller, Kazusa Akademia Center, Japan, pp. 158-162, 1997.

Valenzuela, R. W., and M. E. Wysession, Illuminating the core-mantle boundary with diffracted waves, in *The Core-Mantle Boundary Region*, ed. by M. Gurnis, M. E. Wysession, E. Knittle, and B. A. Buffett, AGU, Washington, D.C, pp. 57-71, 1998.

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