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Lara S. Wagner

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Education

Ph.D. (2005)
University of Arizona, Tucson, AZ
Investigations of upper mantle structure using broadband seismology
Advisor: Susan Beck

B.A. (1996) Cum Laude
Columbia College of Columbia University, New York, NY
Major: History/Sociology

Professional Experience

Staff Scientist *(as of August, 2014)* Carnegie Institution for Science, Washington, DC

Associate Professor *(Spring, 2014)* University of North Carolina at Chapel Hill, Chapel Hill, NC

Assistant Professor *(2008 - 2013)*
University of North Carolina at Chapel Hill, Chapel Hill, NC

Postdoctoral Fellow *(2005 - 2007)*
Carnegie Institution of Washington, Washington, DC

Graduate Research Assistant *(2000 - 2005)*
University of Arizona, Tucson, AZ

Research Intern *(2002)*
Lawrence Livermore National Laboratory, Livermore, CA

Research Intern *(2001)*
BP, Houston, TX

Publications

Eakin, C. M., M.D. Long, S. L. Beck, **L. S. Wagner**, H. Tavera, and C. Condori (2014) Response of the mantle to flat slab evolution: Insights from local S splitting beneath Peru, *Geophysical Research Letters*, v. 41, doi:10.1002/2014GL059943.

Chen, C-W, D.E. James, M.J. Fouch, and **L.S. Wagner** (2013) Lithospheric structure beneath the High Lava Plains, Oregon, imaged by scattered teleseismic waves *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2013GC004958.

L.S. Wagner, and M.D. Long (2013) Distinctive upper mantle anisotropy beneath the High Lava Plains and Eastern Snake River Plain, Pacific Northwest, USA *Geochemistry, Geophysics, Geosystems*, v. 14, doi:10.1002/ggge.20275.

Parker, E. H., R.B. Hawman, K.M. Fischer, and **L.S. Wagner** (2013) Crustal evolution across the southern Appalachians: Initial results from the SESAME broadband array *Geophysical Research Letters*, v. 40, 3852-3857, doi: 10.1002/grl.50761.

L.S. Wagner, M.J. Fouch, D.E. James, and M.D. Long (2013) The role of hydrous phases in the formation of trench parallel anisotropy: Evidence from Rayleigh waves in Cascadia *Geophysical Research Letters*, v. 40, 2642-2646, doi: 10.1002/grl.50525.

Ward, K.M., R. Porter, G. Zandt, S.L. Beck, **L.S. Wagner**, E. Minaya, and H. Tavera (2013) Ambient noise tomography across the Central Andes *Geophysical Journal International*, v. 194, 1559-1573, doi:10.1093/gji/ggt166.

C.B. Till, R. Carlson, J.M. Donnelly-Nolan, M.J. Fouch, **L.S. Wagner**, and W.K. Hart (2013) Depths and temperatures of asthenospheric melting and the lithosphere-asthenosphere boundary in the southern Cascade arc and back-arc, *Geochemistry, Geophysics, Geosystems*, doi:10.1002/ggge.20070.

L.S. Wagner, M.J. Fouch, D.E. James, and S. Hanson-Hedgecock (2012) Crust and upper mantle structure beneath the Pacific Northwest from joint inversions of ambient noise and earthquake data, *Geochemistry, Geophysics, Geosystems*, v.13, Q0AN03, doi:10.1029/2012GC04353.

Long, M.D., C.B. Till, K. Druken, R. Carlson, **L.S. Wagner**, M.J. Fouch, D.E. James, T.L. Grove, N. Schmerr, and C. Kincaid (2012) Mantle dynamics beneath the Pacific Northwest and the generation of voluminous back-arc volcanism, *Geochemistry, Geophysics, Geosystems*, v. 13, Q0AN01, doi:10.1029/2012GC004189.

L.S. Wagner, M.D. Long, M.D. Johnston, and M.H. Benoit (2012) Lithospheric and asthenospheric contributions to shear-wave splitting observations in the southeastern United States, *Earth and Planetary Science Letters*, v. 341-344, p. 128-138.

Hanson-Hedgecock, S., **L.S. Wagner**, M.J. Fouch, and D.E. James (2012) Constraints on the causes of mid -Miocene volcanism in the Pacific Northwest US from ambient noise tomography, *Geophysical Research Letters*, v. 29, L05301, doi:10.1029/2012GL051108.

L.S. Wagner, K. Stewart, and K. Metcalf(2012) Crustal-scale shortening structures beneath the Blue Ridge Mountains, North Carolina, USA, *Lithosphere*, v. 4, p. 242-256, doi:10.1130/L184.1.

L.S. Wagner, D. Forsyth, D.E. James, and M.J. Fouch (2010) Detailed three-dimensional shear wave velocity structure of the

northwestern United States from Rayleigh wave tomography, *Earth and Planetary Science Letters*, v. 299, pp. 273-284.

Long, M., H. Gao, A. Klaus, and **L.S. Wagner** (2009) Shear wave splitting and the pattern of mantle flow beneath eastern Oregon, *Earth and Planetary Science Letters*, v. 288, p. 359-369.

L.S. Wagner, M. Anderson, J.M. Jackson, S.L. Beck, and G. Zandt (2008) Seismic evidence for orthopyroxene enrichment in the continental lithosphere, *Geology*, v. 36, p. 935-938.

L.S. Wagner, S.L. Beck, G. Zandt, and M. Ducea (2006) Depleted lithosphere, cold, trapped asthenosphere, and frozen melt puddles above the flat slab in central Chile and Argentina, *Earth and Planetary Science Letters*, v. 245, p 289-301.

L.S. Wagner, S.L. Beck, and G. Zandt (2005) Upper mantle structure in the south central Chilean subduction zone (30° to 36°S), *Journal of Geophysical Research*, v. 110, B01308, doi:10.1029/2004JB003238.

Giovanni, M. K., S.L. Beck and **L.S. Wagner** (2002) The June 23, 2001 Peru earthquake and the southern Peru subduction zone, *Geophysical Research Letters*, v. 29, doi:10.1029/2002GL015774.

Honors

IRIS/SSA Distinguished Lecturer

Incorporated Research Institutions of Seismology/ Seismological Society of America, 2013

Walter H. Wheeler Faculty Teaching Award

Department of Geological Sciences, April, 2012

AGU Outstanding Student Paper Award

American Geophysical Union Seismology Section Fall Meeting, 2004

AGU Outstanding Student Paper Award

American Geophysical Union Tectonophysics Section Fall Meeting, 2004

Best Overall Talk: 32nd Annual GeoDaze Symposium

University of Arizona, 2004

AGU Outstanding Student Paper Award

American Geophysical Union Seismology Section Fall Meeting, 2003

NSF Graduate Student Research Fellow

National Science Foundation, 2002-2005

Deans List, Columbia University

Fall 1992, Spring 1993, Spring 1994, Spring 1995, Fall 1995, Spring 1996

Chandler Society Research Internship

Columbia University, Department of Chemistry, May 1993.

Grants

University of North Carolina, $45,000, *Central North Carolina Seismic Monitoring*. One time funding to install broadband seismic stations in Sanford, and to adopt an EarthScope Transportable Array Station near UNC-Chapel Hill.

NSF - Geophysics, $315,695(UNC-lead PI), $756,000(total) *Study of the Peruvian flat slab and its effects on the continental lithosphere*, August 1, 2010 - July 31, 2014.

NSF - EarthScope, $302,505(UNC - PI), $1,174,572(total) *Understanding lithospheric suturing and passive margin development beneath the southeastern U.S.*, January 1, 2010 - June 30, 2014.

NSF - Continental Dynamics, $225,539(UNC - PI), $2,545,967(total) *CAUGHT: Central Andean Uplift and the Geodynamics of High Topography*, June 1, 2009 - May 31, 2013.

NSF - Geophysics, $119,620 (sole PI) *Joint inversion of surface waves and teleseismic body waves to study the formation of the High Lava Plains in Eastern Oregon*, July 15, 2008 - June 30, 2011.

Professional Service

To Discipline

IRIS-PASSCAL Standing Committee Chair, 2015 - 2017

IRIS-PASSCAL Standing Committee Member, 2014 - 2015

AGU Special Session Convener, *The causes and consequences of flat slab subduction* Fall Meeting, 2014

AGU Special Session Convener, *High resolution studies of continental suture zones* Fall Meeting, 2014

IRIS/SSA Distinguished Lecturer, 2013

NSF-EarthScope National Meeting Tri-Chair, Raleigh, NC, May 13 -15, 2013

The Cutting Edge - Invited Webinar Presenter, April 24, 2013

IRIS Research Experience for Undergraduates Referee, 2013

AGU Special Session Convener, *The geodynamics of high topography: exploring the interactions between solid earth, hydrosphere, and atmosphere* Fall Meeting, 2012

GSA Special Session Convener, *EarthScope and GeoPrisms in eastern North America: Ongoing endeavors and a look ahead* Fall Meeting, 2012

Invited Keynote Speaker, *UNC-PIT undergraduate student research symposium*, 2012

IRIS-PASSCAL Standing Committee Member, 2008 - 2010

Search Committee Member, *IRIS-PASSCAL Program Manager position*, February - July 2010

Morehead Planetarium Speaker, *AFTERSHOCKS: The Science of Earthquakes*, February 4, 2010

National Science Foundation Panelist, 2009

Invited discussion leader: Early career scientist forum, *Workshop for an Earthscope Science Plan*, October 7-8, 2009

BoD Nominating Committee Member, *Incorporated Research Institutions of Seismology (IRIS)*, Fall 2009

MRI Proposal Co-author, *IRIS-PASSCAL Young Investigator Pool of Instruments (YIPI) MRI proposal*, submitted August, 2009

UNC-BEST, Invited Speaker, *Symposium on Horizons in Astronomy and Physics Education (SHAPE)*, December 30, 2009

Proposal Referee, *NSF-EAR: Geophysics; Continental Dynamics; Earthscope; Petrology and Geochemistry; Instrumentation and Facilities*

Journal Referee, *Geology, Journal of Geophysical Research, Geophysical Journal International, Geophysical Research Letters, Geophys. Geochem. Geosys., Physics of the Earth and Planetary Interiors, Earth and Planetary Science Letters*

Research Mentor, *Carnegie Summer Internship Program/NSF-REU program*, 2006, 2007

Co-convener, *AGU Special Session, Subduction and Lithospheric Deformation in South America* Fall Meeting, 2003