

Maureen D. Long

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Education

- 2000-2006 **Massachusetts Institute of Technology**, Cambridge, MA
Ph.D. in Geophysics, June 2006. Thesis supervisor: Rob van der Hilst
Thesis: Anisotropy and deformation in the Earth's mantle: Seismological observations, geodynamical models, and laboratory experiments
- 1996-2000 **Rensselaer Polytechnic Institute**, Troy, NY
B.S. *summa cum laude*, May 2000.
Major: Geology Minor: Physics

Professional History

- 2009- Assistant professor, Department of Geology and Geophysics, Yale University (*beginning January 2009*)
- 2006-2008 Postdoctoral associate/fellow, Department of Terrestrial Magnetism (DTM), Carnegie Institution of Washington.
- 2000-2006 Graduate research and teaching assistant, EAPS Department, MIT.
- 1998-2000 RPI Undergraduate Research Program participant. Research topic: Crustal deformation in Oregon from GPS measurements. Advisor: Rob McCaffrey.
- 1998, 1999 Summer Research Intern, Department of Geology and Geophysics, University of Minnesota. Research topic: Fabric development in deformed polycrystalline materials. Advisor: Shun Karato.

Research Interests

- Observational seismology; field deployment of broadband seismic arrays
- Multidisciplinary studies of seismic anisotropy in the upper and lowermost mantle
- Shear wave splitting methodologies and splitting intensity tomography
- Subduction zone dynamics and processes; subduction and the mantle flow field
- Numerical models of geodynamical processes and integration with seismic observations
- Laboratory studies of deformation and anisotropy in mantle materials

Honors and Awards

- 2004 Award for Excellence in Teaching, EAPS Department, MIT
- 2003 Outstanding Student Paper Award, Seismology Section, AGU Fall Meeting
- 2000-2003 National Science Foundation Graduate Research Fellowship
- 2000 Joseph L. Resenholtz Prize - awarded annually to a senior at RPI for outstanding work in the earth sciences.
- 1998 Founders Award of Excellence, RPI.

Publications

- Long, M. D.**, Silver, P. G., 2008. The subduction zone flow field from seismic anisotropy: A global view. *Science*, 319, 315-318.
- Kneller, E. A., **Long, M. D.**, van Keken, P. E., 2008. Olivine fabric transitions and shear-wave anisotropy in the Ryukyu subduction system. *Earth and Planetary Science Letters*, 268, 268-282.
- Long, M. D.**, de Hoop, M. V., van der Hilst, R. D., 2008. Wave-equation shear wave splitting tomography. *Geophysical Journal International*, 172, 311-330.
- Long, M. D.**, Hager, B. H., de Hoop, M. V., van der Hilst, R. D., 2007. Two-dimensional modeling of subduction zone anisotropy with application to southwestern Japan. *Geophysical Journal International*, 170, 839-856.
- Lev, E., **Long, M. D.**, van der Hilst, R. D., 2006. Seismic anisotropy in eastern Tibet from shear-wave splitting reveals changes in lithospheric deformation. *Earth and Planetary Science Letters*, 251, 293-304.
- Long, M. D.**, Xiao, X., Jiang, Z., Evans, B., Karato, S.-i., 2006. Lattice preferred orientation in deformed polycrystalline (Mg,Fe)O and implications for seismic anisotropy in D". *Physics of the Earth and Planetary Interiors*, 156, 75-88.
- Long, M. D.**, van der Hilst, R. D., 2006. Shear wave splitting from local events beneath the Ryukyu arc: Trench-parallel anisotropy in the mantle wedge. *Physics of the Earth and Planetary Interiors*, 155, 300-312.
- Long, M. D.**, van der Hilst, R. D., 2005. Estimating shear wave splitting parameters from broadband recordings in Japan: A comparison of three methods. *Bulletin of the Seismological Society of America*, 95, 1346-1358.
- Long, M. D.**, van der Hilst, R. D., 2005. Upper mantle anisotropy beneath Japan from shear wave splitting. *Physics of the Earth and Planetary Interiors*, 151, 206-222.
- McCaffrey, R., **Long, M. D.**, Goldfinger, C., Zwick, P. C., Nabelek, J. L., Johnson, C. K., Smith, C., 2000. Rotation and plate locking at the southern Cascadia subduction zone, *Geophysical Research Letters*, 27, 3117-3120.

Papers in Review/Preparation

- Long, M. D.**, Silver, P. G., 2008. Mantle flow in subduction systems: 1. The sub-slab flow field and implications for mantle dynamics. *Journal of Geophysical Research*, in review.
- Long, M. D.**, 2008. Azimuthal anisotropy in D' beneath the eastern Pacific from SKS-SKKS splitting discrepancies. *Earth and Planetary Science Letters*, in review.
- Long, M. D.**, de Hoop, M. V., van der Hilst, R. D., Hager, B. H., 2008. Shear wave splitting intensity tomography beneath southwestern Japan and coupling with numerical flow models. In preparation for submission to *Journal of Geophysical Research*.
- Long, M. D.**, Klaus, A., Fouch, M. J., James, D. E., and Wagner, L., 2008. Shear wave splitting, mantle flow, and young tectonomagmatism beneath Oregon's High Lava Plains. In preparation for submission to *Earth and Planetary Science Letters*.
- Long, M. D.**, 2008. Frequency-dependent shear wave splitting beneath the Gulf of California. In preparation for submission to *Physics of the Earth and Planetary Interiors*.

Invited Talks and Seminars (selected)

November 2008 - Geological Sciences department colloquium, UNC, Chapel Hill, NC
September 2008 - Earth and Planetary Sciences department colloquium, Rutgers, Piscataway, NJ
May 2008 - Department of Geosciences lecture, Virginia Tech, Blacksburg, VA
March 2008 - Solid earth seminar, Princeton University, Princeton, NJ
February 2008 - Geology department colloquium, University of Maryland, College Park, MD
December 2007 - American Geophysical Union Fall Meeting, San Francisco, CA
November 2007 - Mineral Sciences department seminar, Smithsonian, Washington, DC
September 2007 - Geological Society of Washington monthly meeting, Washington, DC
April 2007 - Earth and atmospheric science department seminar, Purdue, W. Lafayette, IN
March 2007 - Earth and space sciences department seminar, UCLA, Los Angeles, CA
February 2007 - Inverse Problems Center seminar, RPI, Troy, NY
January 2007 - Geology and geophysics department seminar, Yale University, New Haven, CT
October 2006 - Earth science special seminar, University of Southern California, Los Angeles, CA
January 2006 - Geophysics seminar, Woods Hole Oceanographic Institution, Woods Hole, MA
March 2005 - Talk at Mediterranean Mantle Tectonics Workshop, Coldigioco, Italy
February 2005 - Geophysics seminar, Brown University, Providence, RI
February 2004 - Earth and environmental sciences department seminar, RPI, Troy, NY
November 2002 - Seismology seminar, Institut de Physique du Globe, Paris, France
November 2002 - Geophysics seminar, Universiteit Utrecht, Utrecht, The Netherlands

Teaching Experience

- 2005-2006 Guest lecturer, MIT course 12.510, Introduction to Seismology.
- Developed and taught a one-week unit on seismic anisotropy, including theory of elastic wave propagation in anisotropic media and a survey of current research directions.
- 2000-2004 Teaching assistant, MIT courses 12.501, Essentials of Geophysics, (mixed undergraduate/graduate) and 12.510, Introduction to Seismology (graduate).
- Five semesters of teaching experience, including running discussion sections, designing and grading problem sets, frequently lecturing, and running well-attended help sessions. Received consistently excellent student evaluations and a departmental teaching award.

Student Supervision

- Erin Wirth - 2008 undergraduate summer intern, Carnegie Institution of Washington. Supervised a project on shear wave splitting from local and teleseismic earthquakes beneath northern Japan. Project results will be presented at the 2008 Fall AGU meeting (submitted abstract).
- Mignon Johnston - 2008 undergraduate summer intern, Carnegie Institution of Washington. Co-supervised (with Paul Silver) a project on subduction initiation in ocean basins. Project results will be presented at the 2008 Fall AGU meeting (submitted abstract).
- Amanda Klaus - 2007 undergraduate summer intern, Carnegie Institution of Washington. Co-supervised (with Lara Wagner) a project on shear wave splitting and mantle flow beneath the High Lava Plains of Oregon. Project resulted in a student presentation at the 2007 Fall AGU meeting and a co-authored publication is currently in preparation.

Professional Activities

2006 - present	Proposal reviewer for the National Science Foundation (US), the Czech Science Foundation (Czech Republic), and the Natural Environment Research Council (UK).
2003 - present	Manuscript reviewer for <i>Earth and Planetary Science Letters</i> , <i>G-cubed</i> , <i>Geology</i> , <i>Geophysical Journal International</i> , <i>Geophysical Research Letters</i> , <i>Journal of Geophysical Research</i> , <i>Nature</i> , <i>Nature Geoscience</i> , <i>Physics of the Earth and Planetary Interiors</i> , <i>Science</i> , and <i>Tectonophysics</i> .
2006	Student Paper Award judge, seismology section, AGU Fall Meeting
2004	Participant, Summer School in Mathematical Geophysics and Uncertainty in Earth Models, Colorado School of Mines, Golden, CO, July 2004.
2004	Session convener, "New directions in seismic anisotropy," RPI Inverse Problems Center Opening Conference, April 2004.

Professional Affiliations

1999-present	Member, American Geophysical Union
2002-present	Member, American Association for the Advancement of Science
2006-present	Member, Association for Women Geoscientists
2008-present	Member, Seismological Society of America

Field Experience

- High Lava Plains broadband seismic deployment - constructed, installed, and serviced broadband stations in eastern Oregon, southwestern Idaho, and northern Nevada (ongoing).
- Groundwater survey, Plantages Portomari, Curaçao - carried out resistivity, induced polarization, and seismic measurements (Summer 2001).
- Survey of Harrison's Cave, Barbados - performed resistivity/self-potential measurements, geochemical analyses, and electromagnetic cave-to-surface mapping (Spring 2001).
- GPS survey of Oregon and Washington - prepared maps and site information, set up equipment and recorded data, and performed data reduction and analysis (Summer 2000).

Department and University Service Activities

2007-present	Member, Library Committee, Carnegie Institution of Washington
2007-2008	DTM Geophysics Journal Club organizer
2004-2005	Member, sub-committee on Better Advising and Research Ethics, MIT Graduate Student Council (GSC) <ul style="list-style-type: none">• This initiative won a 2005 Program Award for Academic Governance from the National Association of Graduate-Professional Students.
2003-2004	President, EAPS Graduate Student Advisory Council (EGSAC)
2002-2003	Secretary, EGSAC
2002-2003	Organizer of weekly EAPS Geophysics Informal Group Seminar

Education and Outreach Activities

- 2008 Participant, Science-Engineering-Technology Congressional Visits Day (met with congressional staff to encourage support for basic science funding)
- 2008 Panelist, Women in Science Forum, American University Women's Initiative, Washington, DC
- 2008 Invited talk: "Volcanoes and Earthquakes," British School, Washington, DC
- 2006 Mentor, Keys to Empowering Youth (summer science program for middle school girls), MIT
- 2003 Science fair judge, Rindge & Latin High School, Cambridge, MA
- 2003 Invited talk on science careers, Girl Scout Troop 380, Chelmsford, MA
- 2003 Invited talk: "Understanding the Earth," Prescott Elementary, Groton, MA
- 2002 Invited talk: "Studying the Earth Using Seismology," South Elementary, Andover, MA
- 1998-2000 Member, Design Your Future Day Organizing Committee (annual program for high school women considering science and engineering careers, RPI)
- 1997-2000 Board member, Women at Rensselaer Mentoring Program