

Curriculum Vitae

Philip A. Skemer

Department of Earth and Planetary Sciences
Washington University in Saint Louis
Campus Box 1169
1 Brookings Dr.
Saint Louis, MO 63130-4862

Phone (314) 935-3584
E-mail pskemer@wustl.edu
Website <http://rockdef.wustl.edu>

PROFESSIONAL APPOINTMENTS

2009-present Assistant Professor
Department of Earth and Planetary Sciences
Washington University in St. Louis

2007-2009 Postdoctoral Research Associate
Department of Geological Sciences
Brown University

2001-2007 Graduate Research Assistant
Department of Geology and Geophysics
Yale University

EDUCATION

Ph.D., Yale University, Geology and Geophysics, 2007
M.Phil., Yale University, Geology and Geophysics, 2003
B.A., Pomona College, Geology, 2000

SPONSORED RESEARCH

2012-2015: Two-stage Deformation of Olivine: Effects of Deformation History on Seismic Anisotropy
NSF Geophysics EAR-1141795, \$266,664
Sole PI

2011-2012: EAGER: Development of a New Rock Deformation Apparatus for Investigating Earth's Upper Mantle
NSF Instrumentation and Facilities, EAR-1139706, \$50,000
Sole PI

2010-2013: Development of Unique NMR Tools for Utilization and Sequestration of CO₂
Consortium for Clean Coal Utilization, \$210,000 + \$15,000 supplement
Co-I, with Mark Conradi (PI) & Sophia Hayes

2009-2013: Deformation and Microstructural Evolution of Harzburgite
NSF Geophysics, EAR-0911289, \$285,000
Sole PI

March 9, 2012

TEACHING

Wash. U. EPSc 131 - Natural Disasters
Wash. U. EPSc 201 - Earth and the Environment
Wash. U. EPSc 460 - Introduction to Structural Geology
Wash. U. EPSc 580 - Deformation of Planetary Materials
Wash. U. EPSc 590 - Geophysics Seminar

PROFESSIONAL ACTIVITIES

Organizing Committee, Workshop on the Future of Rock Deformation (March 2011-present)

Expert Teacher, TTT Short Course (Texture Topics in Tromsø), University of Tromsø, Norway (October 2011)

Executive Committee, Mineral and Rock Physics Focus Group (MRP), AGU (2010-present)

Steering Committee, Physical Properties of Earth Materials (PPEM) (2010-present)

Editor, Physical Properties of Earth Materials Annual Newsletter (2010-present)

Washington University Elector, COMPRES consortium for high pressure research (2010-present)

Session Convener:

- 2011 Fall AGU - Deformation Processes: Microstructure, Rheology, and the Effects of Fluids
- 2009 Fall AGU - Rock Deformation from Grain Boundaries to Plate Boundaries
- 2007 Fall AGU - Shear Localization from Experimentation, Modeling, and Observation

Ad hoc Peer Reviewer: NSF (Geophysics; CSEDI Programs); Physics of Earth and Planetary Interiors; Earth and Planetary Science Letters; Journal of Geophysical Research; Geophysical Research Letters; GSA Special Volume; Geological Society of London Special Publication; Journal of Petrology; G-cubed; Geophysical Journal International; American Chemical Society Petroleum Research Fund

UNIVERSITY AND COMMUNITY SERVICE

2011-present, Fossett Postdoctoral Fellowship Committee, Wash. U. E&PS

2011-present, Undergrad Recruiting Committee, Wash. U. E&PS

2011-present: Compton Scholarship Selection Committee Wash. U.

2010-2011: Center for Materials Innovation Internal Advisory Group

2010: Panelist, Grad Student Senate forum on "The Academy and The Economy"

2009-present: Graduate Admissions Committee, Wash. U. E&PS

2009: Undergrad Brochure Committee, Wash. U. E&PS

2009: TA Award Committee, Wash. U. E&PS

2003-2006: On-call Geologist Calvin Hill Kindergarten, New Haven, CT

2003-2004: President The Dana Club (Yale Geology Graduate Student Association)

2002-2003: Organizer Annual Departmental Field Trip, Dept. of Geology, Yale

AFFILIATIONS

Center for Materials Innovation, Washington University in Saint Louis
McDonnell Center for Space Studies, Washington University in Saint Louis
American Geophysical Union

ADVISING

Postdoctoral Supervisor

Jolien Linckens (2011-present)

Graduate Advisor

Brandon Mahan (2010-present)

Undergraduate Research Supervisor

Hannah Rabinowitz (2011-present)

Thesis/Examination Committee Member

Andy Surface (Chemistry, 2010-present)

David Heeszel (Earth and Planetary Science, 2011)

Wenli Bi (Physics, 2011)

Maitrayee Bose (Physics, 2011)

Yandi Hu (Energy, Environmental, and Chemical Engineering, 2011)

Mitchell Barklage (Earth and Planetary Science, 2010)

Kasey Wagoner (Physics, 2010)

INVITED TALKS

Ruhr-Universität Bochum, Institut für Geologie, Mineralogie und Geophysik, October 2011

Stanford University, Department of Geophysics Seminar, April 2011

European Geophysical Union, General Assembly, April 2011

Gordon Research Conference on Rock Deformation, August 2010

Saint Louis University, Department of Earth and Atmospheric Sciences Seminar, April 2010

Southern Illinois University, Department of Geology Seminar Series, March 2010

University of Missouri, Department of Geological Sciences Colloquium, January 2010

Woods Hole Oceanographic Institute, Geochemistry & Geophysics Seminar, March 2009

Washington University in St. Louis, Departmental Colloquium, February 2009

University of Minnesota, Hard Rock Lunch, January 2009

Washington & Lee University, Departmental Seminar, January 2009

Lamont-Doherty (Columbia University) Seismology, Geology, and Tectonophysics Division Seminar Series, November 2006

Woods Hole Oceanographic Institute, Geophysics Seminar, November 2006

HONORS

2005: William E. Ford Prize for excellence in Mineralogy

2004: Outstanding Student Paper, Tectonophysics Section, AGU Fall Meeting

2002-03: Frederick C. Stanley Fellowship in Mineralogy

2002: Honorable Mention, Outstanding Student Paper, Tectonophysics Section, AGU Fall Meeting

2001-02: Henry Gardiner Ferguson Fellowship in Geology

PUBLICATIONS (* indicates student author)

- Linckens, J., Skemer, P. (in prep) Dynamic recrystallization and phase mixing in experimentally deformed harzburgite
- *Surface, J.A., Skemer, P., Hayes, S., Conradi, M., (submitted to JACS) High pressure and temperature NMR analysis of magnesium carbonate formation from CO₂
- Skemer, P., Warren, J.M., Hirth, G., (2012) The influence of deformation history on the interpretation of seismic anisotropy, *Geochemistry Geophysics Geosystems*, **13**:3, doi:10.1029/2011GC003988
- Skemer, P., Sundberg, M., Hirth, G., Cooper, R., (2011), Torsion experiments on coarse-grained dunite: implications for microstructural evolution when diffusion creep is suppressed, *Deformation Mechanism, Rheology & Tectonics: Microstructures, Mechanics & Anisotropy* Geological Society of London Special Publication, **360**:211-223.
- *Cull, S., Arvidson, R.E., Mellon, M.T., Skemer, P., Shaw, A., Morris, R.V., (2010) Composition of subsurface ices at the Mars Phoenix Landing Site, *Geophysical Research Letters*, **37**:L24203, doi:10.1029/2010GL045372
- Skemer, P., Warren, J.M., Kelemen, P.B., Hirth, J.G., (2010) Microstructural and rheological evolution of a mantle shear zone, *Journal of Petrology*, **51**:43-53.
- Skemer, P., Karato, S-i., (2008) Sheared lherzolite xenoliths revisited, *Journal of Geophysical Research*, **113**: B07205, doi:10.1029/2007JB005286.
- Karato, S-i., Jung, H., Katayama, I., Skemer, P., (2008) Geodynamic significance of seismic anisotropy of the upper mantle: New insights from laboratory studies, *Annual Review of Earth and Planetary Science* **36**:59-95.
- Skemer, P., Karato, S-i., (2007) Effects of solute segregation on the grain-growth kinetics of orthopyroxene with implications for the deformation of the upper mantle, *Physics of Earth and Planetary Interiors* **164**:186-196.
- Skemer, P., Karato, S-i., (2007) Reply to Comment on "The misorientation index: Development of a new method for calculating the strength of lattice-preferred orientation," *Tectonophysics* **441**:119-120.
- Skemer, P., Katayama, I., Karato, S-i., (2006) Deformation fabrics of the Cima di Gagnone Peridotite Massif, Central Alps, Switzerland: Evidence of deformation at low temperatures in the presence of water, *Contributions to Mineralogy and Petrology* **152**:43-51.
- Skemer, P., Katayama, I., Jiang, Z., Karato, S-i., (2005) The misorientation index: Development of a new method for calculating the strength of lattice-preferred orientation, *Tectonophysics* **411**:157-167.

March 9, 2012