

# ANNA MAHR COURTIER

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## **Education**

### **University of Minnesota-Twin Cities**

Ph.D. Geophysics, May 2008

### **University of Wisconsin-Madison**

BS Geology and Geophysics, May 2002

## **Academic Appointments**

James Madison University  
Department of Geology and Environmental Science  
Assistant Professor, 2008 - Present

## **Research Background**

University of Minnesota, Advisor: Justin Revenaugh, 2003 - 2008  
*Mantle Dynamics, Composition, and State in Regions of Active and Ancient Subduction*

University of Wisconsin: Employment, 2002-2003  
Geophysics Laboratory Research Intern, Supervisor: Nikolas I. Christensen

University of Wisconsin: Advisor: Clark Johnson, 2000-2002  
*An Electron Microprobe Study of the Fe-Ti Oxide Minerals from Chaos Crags, Lassen Volcanic Center, California*

Carnegie Institution of Washington, Advisors: Charles Prewitt & Przemyslaw Dera, 2000  
*High Pressure Studies of Urea Using Single Crystal X-Ray Diffraction*

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## Teaching Experience and Training

### **James Madison University, Department of Geology and Environmental Science**

GEOL110L: Physical Geology Lab

GEOL291: Writing and Communication in the Geosciences

GEOL398: Geophysics and Geochemistry of Hawaii from Top to Bottom

GEOL440: Geophysics

GEOL442: Field Geophysics

GSCI101: Physics, Chemistry, and the Human Experience

GSCI104: Geology and Cinema

### **University of Minnesota, Department of Geology and Geophysics**

GEO2201: Geodynamics I: The Solid Earth

Laboratory Teaching Assistant: Fall 2005, Fall 2006

### **Academy College, Bloomington Minnesota**

GM2013: Environmental Science

Co-Instructor; Summer 2006

### **Macalester College, Geology Department**

GEO102: Exploring the Solar System

Guest Lecturer and Laboratory Co-Instructor: Spring 2006

### **University of Minnesota, Graduate School**

GRAD8101/8102: Preparing Future Faculty Teaching Forum

Participant: 2005-2006, 6 credit hours

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## Service

### **James Madison University:**

Webmaster, Fall 2008 – Present

Library Representative, Fall 2008 – Present

Geophysics Option Concentration/Minor Committee, Fall 2008 – Present

Physics Soft Condensed Matter Search Committee, Fall 2009

Geology Club 5<sup>th</sup> Grade Open House, Fall 2008, Fall 2009

Soil Science and Engineering Geology Search Committee, Spring 2009

Graduate School Information Seminar, Fall 2008

### **University of Minnesota, Department of Geology and Geophysics:**

Geophysics Faculty Search Committee, Student Member, August 2005-May 2006

Seminar Planning Committee, January 2004-April 2006

Advisory Board Discussion, Student Member, October 2005

Computer Personnel Search Committee, Student Member, Fall 2004

### **External Service:**

Session Chair, “Three-Dimensional Seismic Models: Theory, Application, and Interpretation III”, American Geophysical Union Fall Meeting 2008

Proposal Reviews

National Science Foundation: Earthscope, CSEDI

Manuscript Reviews

Earth and Planetary Science Letters

Geophysical Journal International

Geophysical Research Letters

Television Interview

WHSV TV3 (ABC, Harrisonburg VA)

Newspaper Interview

Free-Lance Star, Fredericksburg, VA

### **External Outreach:**

Oak Point Intermediate School, Eden Prairie MN

Volunteer Speaker, January 2007 & November 2005

Hope Academy, Minneapolis MN

Volunteer Speaker, March 2006

Science Museum of Minnesota: Earth Science Workshop

Volunteer: September 2005

Gleason Lake Elementary School Science Fair, Wayzata MN

Volunteer, November 2003

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## **Awards and Honors**

### **University of Minnesota:**

Doctoral Dissertation Fellowship, 2006-2007

Graduate School Fellowship, 2003-2004

### **University of Minnesota - Department of Geology and Geophysics:**

V. Rama Murthy and Janice Noruk Fellowship, 2005-2007

David K. Jensen Fellowship, 2005-2006

Dennis Graduate Fellowship, 2004-2005

Harold Mooney Fellowship, 2004-2005

Supplemental Fellowship, Summer 2004

### **University of Wisconsin-Madison:**

Hilldale Undergraduate Research Fellowship, 2001-2002

Department of Geology and Geophysics Outstanding Junior and Senior Scholarships, 2000-2002

Vilas Scholarship, 1998-1999

### **Fort Atkinson (Wisconsin) Community Foundation:**

Rutledge Graduate Scholarship, 2004-2006

Theodore Batterman Scholarship, 1998-2002

## **Professional Memberships**

American Geophysical Union (AGU)

Association for Women Geoscientists (AWG)

Geologic Society of America (GSA)

National Association of Geoscience Teachers (NAGT)

Study of Earth's Deep Interior (SEDI)

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## **Publications**

Courtier, A.M., J.B. Gaherty, J. Revenaugh, M.G. Bostock, and E.J. Garnero, In Press. Seismic anisotropy associated with continental accretion beneath the CANOE array, northwestern Canada, *Geology*.

Bagley, B., A.M. Courtier, and J. Revenaugh, 2009. Melting in the deep upper mantle oceanward of the Honshu slab, *Physics of the Earth and Planetary Interiors*, 175, 137-144, doi:10.1016/j.pepi.2009.03.007.

Courtier, A.M. and J. Revenaugh, 2008. Slabs and shear wave reflectors in the midmantle, *Journal of Geophysical Research*, 113, B08312, doi:10.1029/2007JB005261.

Courtier, A.M., M.G. Jackson, J.F. Lawrence, Z. Wang, C.-T. A. Lee, R. Halama, J. Warren, R. Workman, W. Xu, M.M. Hirschmann, A.M. Larson, S.R. Hart, L. Stixrude, C. Lithgow-Bertelloni, and W.-P. Chen, 2007. Correlation of seismic and petrologic thermometers suggests deep thermal anomalies beneath hotspots, *Earth and Planetary Science Letters*, 264, 308-316.

Courtier, A.M., B. Bagley, and J. Revenaugh, 2007. Whole mantle discontinuity structure beneath Hawaii, *Geophysical Research Letters*, 34, L17304, doi:10.1029/2007GL031006.

Courtier, A.M. and J. Revenaugh, 2007. Deep upper mantle melting beneath the Tasman and Coral Seas detected with ScS reverberations, *Earth and Planetary Science Letters*, 259, 66-76.

Courtier, A.M. and J. Revenaugh, 2006. A water-rich transition zone beneath the eastern United States and Gulf of Mexico, in Jacobsen, S. and Van der Lee, S. (Eds.) *Earth's Deep Water Cycle: Geophysical Monograph*, 168, 181-193.

Courtier, A.M., D.J. Hart, and N.I. Christensen, 2004. Seismic properties of Leg 194 serpentinites and their geophysical implications. In Shinohara, M., Salisbury, M.H., and Richter, C., (Eds.), *Proceedings of the Ocean Drilling Program*, Scientific Results, 195, 1-12.

## **Presentations** (\* = Student Author)

Mort, A.K.\* and A.M. Courtier, 2010. Ground Penetrating Radar Study of Site 44ST0286: Military Encampment at Camp Misery, Virginia. Mid-Atlantic Archaeology Conference, Spring 2010 Meeting.

Courtier, A.M. and G.M. Leahy, 2009. Joint Receiver Function – ScS Reverberation Analysis Examining Discontinuity Structure Beneath Ocean Islands, *Eos Transactions of the American Geophysical Union*, Fall Meeting 2009, D113A-1634.

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## **Presentations, cont.**

Courtier, A.M. and T.J. Scott, 2009. Evaluating Scientific Misconceptions and Scientific Literacy in a General Science Course, Eos Transactions of the American Geophysical Union, Fall Meeting 2009, ED23A-0521.

Brooks, T.\* and A.M. Courtier, 2009. Attenuation Analysis of Quarry Blast Vibrations, Eos Transactions of the American Geophysical Union, Fall Meeting 2009, NS13A-1140.

Daigle, E., C.A. Dalton, J.B. Gaherty, and A.M. Courtier, 2009. Mapping the Radially Anisotropic Crustal Velocity Structure of NW Canada Using Ambient-Noise Tomography, Eos Transactions of the American Geophysical Union, Fall Meeting 2009, U51C-0041.

Courtier, A.M., J.B. Gaherty, and C.A. Dalton, 2008. Mapping the Moho Beneath Northwest Canada: Crustal Structure Across CANOE, Eos Transactions of the American Geophysical Union, Fall Meeting 2008, S23A-1874.

Dalton, C.A., J.B. Gaherty, and A.M. Courtier, 2008. Mapping the Radially Anisotropic Crustal Velocity Structure of NW Canada with Ambient-Noise Tomography, Eos Transactions of the American Geophysical Union, Fall Meeting 2008, S31A-1877.

Revenaugh, J., A.M. Courtier, and B. Bagley, 2008. Seismic Hygrometry of the Mantle, Eos Transactions of the American Geophysical Union, Fall Meeting 2008, Invited, T13C-1961.

Courtier, A.M. and J. Revenaugh, 2007. Deep Upper Mantle Melting Detected with ScS Reverberations near Subduction Zones, Eos Transactions of the American Geophysical Union, Fall Meeting 2007, Invited, MR31D-03.

Courtier, A.M., J.B. Gaherty, and J. Revenaugh, 2007. Continental Assembly and Anisotropy Beneath the CANOE Array, Eos Transactions of the American Geophysical Union, Fall Meeting 2007, V43B-1366.

Courtier, A.M. and J. Revenaugh, 2007. Signals of Subduction and Subducted Slabs in the Mid-Mantle, Subduction Zone Geodynamics Conference, Montpellier France, June 2007.

Courtier, A.M., J. Revenaugh, M.G. Bostock, J.B. Gaherty, and E.J. Garnero, 2006. Upper Mantle Discontinuity Structure from Receiver Functions Along the CANOE Array, AGU Fall Meeting 2006, S41E-03.

Lee, C.-T., A.M. Courtier, R. Halama, M. Jackson, A. Larson, J. Lawrence, Z. Wang, J. Warren, R. Workman, W. Xu, M. Hirschmann, S. Hart, L. Stixrude, C. Lithgow-Bertelloni, and W.-P. Chen, 2006. The Thermal State of the Earth, AGU Fall Meeting 2006, V33D-08.

Courtier, A.M., 2006. Transition Zone Discontinuities Beneath the Southwest Pacific, 2nd CIDER Summer Program, Kavli Institute for Theoretical Physics, University of California-Santa Barbara.

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### **Presentations, cont.**

Courtier, A.M. and J. Revenaugh, 2005. Mapping the Transition Zone Discontinuities Beneath the Southwest Pacific Ocean, Eos Transactions of the American Geophysical Union, Fall Meeting 2005, D141A-1252.

Courtier, A.M. and J. Revenaugh, 2004. Mantle Discontinuities Beneath the United States and Gulf of Mexico from ScS Reverberations, Eos Transactions of the American Geophysical Union, 85:7, Fall Meeting 2004, S53B-0204.

Revenaugh, J., A.M. Courtier, M. Avants, J. Gaherty, E. Garnero, N. Schmerr, M. Thorne, S. Ford, J. Yoburn, M. Bostock, A. Baig, A. Langlois, J. Mercier, J. Oueity, T. Nicholson, and N. Barstow, 2004. CANOE: A Broadband Array in Northwestern Canada, Eos Transactions of the American Geophysical Union, 85:7, Fall Meeting 2004, S53B-0208.