

Christine Reif

UCSC Earth and Planetary Sciences
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Research and Education

Postdoctoral Fellow

August 2005-present

Title: University of California President's Postdoctoral Fellow
Institution: University of California Santa Cruz
Department: Earth and Planetary Sciences
Focus: The thermo-chemical structure and dynamics of the Earth's mantle
Mentor: Dr. Quentin Williams

Doctor of Philosophy

September 1999 – July 2005

Institution: University of California San Diego
Department: Scripps Institution of Oceanography, Institute of Geophysics and Planetary Physics
Dissertation: New Techniques for Analyzing Long-Period Seismic Data to Determine 3D Thermal and Compositional Structure of the Earth's Mantle
Advisor: Dr. T. Guy Masters
Specialization: Global Seismology
Awards: IGPP Mini-grant collaborating with Lawrence Livermore National Lab., 2000-2004

Bachelor of Arts

August 1995 – May 1999

Institution: Rice University
Major: Geophysics
Senior Thesis: Imaging the "S" reflector offshore the Iberian Peninsula
Advisors: Dale Sawyer and Manik Talwani
Honors: Hanszen College Fellow, 1999
Rice University Scholars Program, 1998-1999
Rice University Torkild Rieber Award in Geophysics, 1998

Research Interests

- Determining the degree of continuity and termination depth of subducting lithosphere.
- Investigating seismic constraints on transition zone and core-mantle boundary thermal and compositional variations.
- Identifying seismic tomographic anomalies that can neither be classified as plumes or slabs.
- Obtaining detailed 410 km and 660 km discontinuity topography.

Teaching Experience

Science Corps: Partnerships Involving the Scientific Community in Elementary Schools, 2000-2004

Long-term instruction of elementary school teachers and students coordinated by San Diego State University and the San Diego County Office of Education. Involved bi-weekly partnering with teachers in the public school system to address the California Earth science standards. (<http://www.sdsa.org/pisces>)

Instructor: Show-Me-Geology Program, San Diego State University, 2001-2004
Presenting seismology to elementary students using video, computer, and hands-on activities. Estimated number of students who experienced the module, 2500-3000.

Guest Lecturer: UCSC EART 80A “Earth Catastrophes”, Fall 2006, Plate Tectonics: UCSC EART 80D “Earth Sciences and the Cinema”, Winter 2007, Plate Tectonics

Teaching Assistant: UCSD Erth 01 “The Planets”, Spring 2005

Participant: UCSD’s Preparing Professional Faculty Program

University Services

Organizational Leader: SCOPE, Scripps Community Outreach Program for Education, 2001-2005.

Organizing Scripps Institution of Oceanography graduate students, faculty, and staff to fulfill outreach requests from the San Diego community and to develop programs to bring and educate the community on the Scripps campus. (<http://sioscope.ucsd.edu>)

Steering Committee: SPAR, Science Policy Analysis Roundtable, 2003-2005
Organizing bi-monthly discussions on topics related to the interaction between science and governmental policies.

Organizer: Coordinating a bi-monthly Journal Club for the UCSC Center for the Study of Imaging and Dynamics of the Earth, 2005-present

Geophysics Curricular Group Representative: Scripps Institution of Oceanography, 2000-2001.

Invited Talks

“Observing and Quantifying Subducting Slabs”, USC Geophysics Seminar, Fall 2006

“What can seismic tomography really say about the temperature, composition, and mineralogy of the lowermost mantle”, UCSC Whole Earth Seminar and Berkeley Seismological Laboratory Seminar, Fall 2006

“Using seismic tomography to discriminate between thermal, chemical, and mineralogical structure of the lower mantle”, SEDI Conference, Prague, Summer 2006

“The 410 and 660: Discontinuities with Behavior Issues”, Caltech, Fall 2003

“Cluster Analysis of Long Period Waveforms: Implications for Global Tomography”, Lawrence Livermore National Laboratory, Spring 2003

Workshops

Cooperative Institute for Deep Earth Research (CIDER) I, Summer 2004, (www.deep-earth.org): Initiated research on the properties of subducting slabs as they interact with the transition zone. Resulted in an AGU abstract in which I did a comparative study of deep earthquake focal mechanisms in relation to the observed fast anomaly for the all regions with seismicity within the transition zone.

Meeting of Young Researchers in Earth Sciences (MYRES) I, Summer 2004: Led culminating discussion on what insights seismology can and cannot provide regarding deep Earth structure.

CIDER II, Summer 2006: Continued the research from CIDER I, however concentrating on quantifying the amount of slab material in the transition zone for use in dynamic calculations of slab inhibition across the 660 km discontinuity which resulted in an AGU abstract, and will be continued into publication.

References

Dr. T. Guy Masters, UCSD MS-0225, La Jolla, CA 92093 gmasters@ucsd.edu 858-534-4122

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Dr. Adam Dziewonski, Department of Earth and Planetary Sciences, Harvard University, 20 Oxford Street, Cambridge, MA, 02138, dziewons@eps.harvard.edu 617-495-2510