

Rowena Benfer Lohman

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Geology & Geophysics
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Education

- 2004* **California Institute of Technology**
Ph.D. Geophysics
Thesis title: "The Inversion of Geodetic Data for Earthquake Parameters"
- 1998* **California Institute of Technology**
B.S. Geology

Honors and Awards

- 2003* Outstanding GPS Poster Presentation, Caltech Graduate Science Symposium
- 1999* AGU Outstanding Student Paper Award, Geodesy Section
- 1999-2002* National Science Foundation Graduate Fellowship
- 1998* Henshaw Fellowship
- 1998* Fritz Burns Prize in Geology
- 1997* Rosalind W. Alcott Merit Scholarship
- 1997* Glamour Magazine Top Ten College Women of the Year
- 1996-1997* Howard Reynolds Memorial Prize in Geology
- 1993-1997* Joseph E. Terraciano Scholarship
- 1993* National Merit Scholarship

Research Experience

- 2004-present* **Woods Hole Oceanographic Institution**
Postdoctoral Scholar
 Examining relationships between different parts of the seismic cycle
- 1997-2004* **Caltech Seismological Laboratory**
Assistant Scientist
 Constraining slip distributions for subduction zone earthquakes
Graduate work with Mark Simons:
 Processing of radar interferometry data
 Linear inversion techniques for coseismic fault slip distributions
 Nonlinear inversions techniques for precise earthquake locations
 Applications of InSAR to tectonics of Iran
Undergraduate work with Caltech and JPL collaborators:
 Development of freely available processing package for radar interferometry

Internships and Work Experience

- 2002-2004* URS Corporation Consultant
Providing precise earthquake locations for Comprehensive Test Ban Treaty (CTBT) program
- 1999* Field Assistant in Antarctica, University of Texas, Austin
In-field processing of airborne geophysical data
- 1997* Summer Undergraduate Research Fellowship (SURF), Caltech
Processing of radar interferometry data
- 1996* Summer of Applied Geophysical Experience (SAGE), Los Alamos, NM
Field geophysics course with applications to tectonics of Rio Grande Rift
- 1995* Laboratory Assistant, Prof. Joe Kirschvink
Paleomagnetism Laboratory: Preparation and analysis of samples
- 1995* Volunteer, GPS survey in association with Central Washington University
- 1994* Field Assistant in Antarctica, Caltech
Operated hydraulic drilling equipment during three-month field season
- 1994* Summer internship at the Univ. of Fairbanks, Alaska, Geophysical Institute
Field work on Bagley Icefield, southern Alaska
- 1994-1995* Laboratory Assistant, Prof. Barclay Kamb
Examined grain size distributions of subglacial till samples
- 1992* Juneau Icefield Research Program

Teaching Experience

- 2005* **Colorado School of Mines, guest lecturer**
2-hour class on InSAR and inverse theory
- 1998-2003* **Caltech Teaching Assistant**
- Earth and Environment, Spring 1998-2000
Head TA in 2000, managing 15 other teaching assistants
Helped organize and lead field trip for >150 students
 - Physical Geology, Fall 2000
Graded homework, organized and supervised labs, helped plan field trip
 - Field Geophysics, Spring/Summer 2002
Helped organize week-long geophysics field camp near Mono Lake, CA
Wrote software for use in the field
Instructed students on use of field instruments and data analysis tools
 - Regional Field Geology of the Southwestern United States, Fall 2003
Helped organize and lead 3-day field trip to Mojave desert
 - Structural Geology, Spring 2003
Organized and supervised two 3-hour lab sessions each week
Assisted on introductory field mapping trip to Mojave desert
Lectured in laboratory on:
 - Analysis and interpretation of field observations
 - Geology of western United States

Refereed Publications

- Location and mechanism of the Little Skull Mountain earthquake as constrained by radar interferometry and seismic waveform modeling, R. B. Lohman, M. Simons, and B. Savage, *J. Geophys. Res.*, **107** (B6), 2118, doi:10.1029/2001JB000627, 2002.
- Some thoughts on the use of InSAR data to constrain models of surface deformation: Noise structure and data downsampling, R. B. Lohman and M. Simons, *Geochem. Geophys. Geosyst.*, **6**, Q01007, doi:10.1029/2004GC000841, 2005.
- Locations of selected small earthquakes in the Zagros mountains, R. B. Lohman and M. Simons, *Geochem. Geophys. Geosyst.*, **6**, Q03001, doi:10.1029/2004GC000849, 2005.

Other Publications

- Inferring fault slip from surface deformation using spatially variable regularization schemes, R. B. Lohman and M. Simons, submitted to *Geophys. J. Int.*, in revision.
- Slip distributions for seven large earthquakes, R. B. Lohman and M. Simons, in preparation.
- Spatial compactness as a regularization tool in slip inversions, R. B. Lohman and M. Simons, in preparation.
- Quantitative constraints on the effect of horizontal rheological contrasts on inversions of geodetic data for coseismic slip distributions, R. B. Lohman, in preparation.

Invited Presentations

- Division Seminar, Colorado School of Mines, April, 2005
- Division Seminar, University of Rochester, April, 2005
- Department of Geosciences, Pennsylvania State University, February, 2005 (2 presentations)
- Division Seminar, State University of New York, Buffalo, January, 2005
- Heiland Distinguished Lecture Series, Colorado School of Mines, February, 2005
- Geophysics Seminar, University of Reno, NV, May, 2004
- Department of Geosciences, Pennsylvania State University, April, 2004 (2 presentations)
- Geophysics Seminar, Woods Hole Oceanographic Institution, February, 2004
- Department of Geosciences, University of Arizona, February, 2004 (2 presentations)
- SAR Forum, Jet Propulsion Laboratory, June, 2003
- Geophysics Seminar, University of California, Los Angeles, January, 2003

Contributed Presentations

- Earthscope National Meeting, New Mexico, 2005
- InSAR Working Group Workshop, California, 2005
- Geophysics Brownbag Seminar, Caltech, 2003
- Seismolab Resource Seminar, Caltech, 2002 and 2003
- American Geophysical Union Fall Meeting, 1999-2004 (6 presentations)