

Heidi Stenner, P.G.
Senior Scientist

Professional Profile

Ms. Heidi Stenner is a Senior Scientist in Exponent's Civil Engineering practice. She specializes in fault investigations, post-earthquake studies, tectonic and fluvial geomorphology, desert geomorphology and soil analysis, flood hazard mapping, aerial photograph analysis, detailed geologic field mapping, analysis of landscape changes through time, site history investigations, and subsurface characterization.

Before joining Exponent, Ms. Stenner worked for more than 9 years researching active faults and communicating earthquake hazards to the public. She has performed field investigations of surface rupture and its effects from large earthquakes in Turkey, Argentina, Mexico, and Mongolia; as well as in California, Alaska, Arizona, Montana, and off-shore of California and Oregon.

Academic Credentials and Professional Honors

M.S., Geology, Arizona State University (*summa cum laude*), 1998

B.S., Geology, Washington State University, 1996

Recipient of the Shoemaker Award for External Communication, from the U.S. Geological Survey, for creating excitement and enthusiasm for science among nonscientists, 2007

U.S. Geological Survey, Earthquake Hazard Team's "Team Night on the Town Award," for "outstanding efforts to educate the public...about earthquake hazards," 2003, 2004

U.S. Geological Survey, Earthquake Hazard Team's "Special Thanks for Achieving Results Award," 2001

Licenses and Registrations

Professional Geologist, California, #8550

Publications

Stenner H. Looking into the past with earthquake trenches. In: *Earthquake Science Explained: A series of Ten Short Articles for Students, Teachers, and Families*. d'Alessio MA (ed), U.S. Geological Survey General Information Product 21, 2006; 4.

Haeussler PJ, Schwartz DP, Dawson TE, Stenner HD, Lienkaemper JJ, Sherrod B, Cinti FR, Montone P, Craw P, Crone AJ, Personius S. Surface rupture and slip distribution of the Denali and Totschunda faults in the 3 November 2002 M7.9 earthquake, Alaska. *Bulletin of the Seismological Society of America* 2004; 94(6b):S23–S52.

Haeussler PJ, Schwartz DP, Dawson TE, Stenner HD, Lienkaemper JJ, Cinti FR, Montone P, Sherrod B, Craw P. Surface rupture of the 2002 faults in the 3 November 2002 M7.9 earthquake, Alaska. *Earthquake Spectra* 2004; 20(3):565–578.

Michael AJ, Ross SJ, Stenner HD. Displaced rocks, strong motion, and the mechanics of shallow faulting at Hector Mine. *Bulletin of the Seismological Society of America* 2002; 92(4):1561–1569.

Langridge RM, Stenner HD, Fumal TE, Christofferson SA, Rockwell TK, Hartleb RD, Bachhuber J, Barka AA. Geometry, slip distribution and kinematics of surface rupture on the Sakarya fault segment during the 17 August 1999 Izmit earthquake, Turkey. *Bulletin of the Seismological Society of America* 2002; 92(1):107–125.

Barka AA, Akyuz HS, Altunel E, Sunal G, Cakir Z, Dikbas A, Yerli B, Armijo R, Meyer B, de Chabaliere JB, Rockwell TK, Dolan JR, Hartleb RD, Dawson TE, Christofferson SA, Tucker A, Fumal TE, Langridge RM, Stenner HD, Lettis W, Bachhuber J, Page WD. The surface rupture and slip distribution of the 17 August 1999 Izmit Earthquake (M 7.4), North Anatolian fault. *Bulletin of the Seismological Society of America* 2002; 92(1):43–60.

Lund WR, Taylor WJ, Pearthree PA, Stenner HD, Amoroso L, Hurlow H. Structural development and paleoseismicity of the Hurricane fault, southwestern Utah and northwestern Arizona. In: *Field guide to geologic excursions in southwestern Utah and adjacent areas of Arizona and Nevada*. Lund WR (ed), U. S. Geological Survey Open-File Report 02-172, pp. 1–84, 2002.

Stenner HD. Paleoseismic studies along the southern Calaveras Fault. In: *Great Shakes of the Eastern Bay Area: A Ride Through the Past to See the Future*. Kelson K (ed), Seismological Society of America Annual Meeting Field Trip Guidebook, variously paginated, 2001.

Harden DR, Stenner HD, Blatz I. The Calaveras and San Andreas faults in and around Hollister. In: *Geology and Natural History of the San Francisco Bay Area*. Stoffer PW, Gordon LC (eds), National Association of Geoscience Teachers Fall Conference Field Trip Guidebook, pp. 145–164, 2001.

U.S. Geological Survey. Implications for earthquake risk reduction in the United States from the Kocaeli, Turkey, Earthquake of August 17, 1999. U.S. Geological Survey Circular 1193, 64p., 2000.

Stenner HD, Ueta K. Looking for evidence of large surface rupturing events on the rapidly creeping southern Calaveras fault, California. In: Active Fault Research for the New Millennium. Okumura K, Takada K, Goto H (eds), Proceedings of the Hokudan International Symposium and School on Active Faulting, pp. 479–486, 2000.

Stenner HD, Lund WR, Pearthree PA. Most recent paleoearthquake constraints and slip rates for a portion of the Hurricane fault, southwestern USA. US Geological Survey Open-File Report 99-0400, pp. 83–87, 1999.

Stenner HD, Lund WR, Pearthree PA, Everitt BL. Hurricane fault in northwestern Arizona and southwestern Utah. Arizona Geological Survey Open-File Report 99-8, 138 p., 1999.

Stenner HD. A paleoseismic investigation of a portion of the Hurricane fault, northwestern Arizona and southwestern Utah. M.S. Thesis, Arizona State University, 102 p., 1998.

Presentations and Published Abstracts

Cydzik K, Hamilton D, Stenner H, Cattarossi A, Shrestha PL. Natural hazard public policy implications of the May 12, 2008 M7.9 Wenchuan earthquake, Sichuan, China. American Geophysical Union 2009 Fall Meeting, San Francisco, CA, December 14–18, 2009.

Stenner HD, Zoback ML, Schwartz DP. The Hayward Fault exposed! 20,000 visitors made it a success. EOS Transactions, American Geophysical Union, 2007; 88(52):S23C–05.

Stenner HD. Coming soon! The Fremont Earthquake exhibit. Presentation to Northern California Earthquake Hazards Annual Meeting, Menlo Park, CA, 2005.

Stenner HD, Crosby CJ, Dawson TE, Amoroso L, Pearthree PA. A record of the past three surface-rupturing earthquakes along the central Hurricane fault, Rock Canyon, Arizona. Poster presentation to the Basin and Range Seismic Hazard Summit, Reno, NV, 2004.

Stenner HD, Crosby CJ, Dawson TE, Amoroso L, Pearthree PA, Lund WR. Evidence for variable slip from the last three surface-rupturing earthquakes along the central Hurricane fault zone. Seismological Research Letters, 2003; 74(2):238.

Stenner HD. Stop 1: A visit to Costa Ranch with an overview of both Costa and Bertuccio Ranch paleoseismic sites along the southern Calaveras fault. Field trip presentation to participants of the Calaveras Workshop, 10 p., 2002.

Stenner HD, Pearthree PA, Lund WR, Dawson TE, Amoroso L. Towards a better understanding of late Quaternary fault rupture, southern Anderson Junction section, Hurricane

fault, northwestern Arizona. Abstracts with Programs, Geological Society of America 2002; 34(4):P-37.

Stenner HD, Schwartz DP. Paleoseismology in Patagonia: The Fagnano fault and surface rupture from the great 1949 Tierra del Fuego earthquakes. Seminar presentation to the USGS Earthquake Hazard Team, Menlo Park, CA, 2001.

Stenner HD. Activity of the Hurricane fault and the involvement of cosmogenic exposure dating. Presentation to Lawrence Livermore National Laboratory and USGS personnel as part of a workshop on the state of cosmogenic isotope research in active faulting studies, Livermore, CA, 2000.

Stenner HD. The 1999 earthquakes in northwestern Turkey: What happened and the geology behind it. Presentation to the Northern California Geological Society, Orinda, CA, 2000.

Stenner HD, Dawson TE, Hamilton JC. Further investigation into the late Holocene faulting record of the rapidly creeping southern Calaveras fault. EOS Transactions, American Geophysical Union 2000; 81(48):1170.

Stenner HD, Ueta K, Hamilton JC. Looking for evidence of large surface ruptures along the Southern Calaveras Fault. EOS Transactions, American Geophysical Union, 1999; 80(46):775.

Langridge R, Stenner HD. Photo field trip along a central section of the 1999 Izmit earthquake rupture. Presentation to the USGS Earthquake Hazard Team, 1999.

Schwartz D, Hecker S, Ponti D, Stenner H. Bulnay or bust- low temperature paleoseismology along the rupture of the Great (M8) 1905 Northern Mongolia earthquake. Presentation to the USGS Earthquake Hazard Team, 1999.

Stenner HD, Lund WR, Pearthree PA, Everitt BL. Late Quaternary history and rupture characteristics of the Hurricane fault, southwestern Utah and northwestern Arizona. EOS Transactions, American Geophysical Union, 1998; 79(45):612.

Stenner HD, Lund WR, Pearthree PA, Everitt BL. Quaternary history and rupture characteristics of the Hurricane fault, southwestern Utah and northwestern Arizona. Geological Society of America, Abstracts with Programs, 1998; 30(6):37-38.

Prior Experience

Manager, Fremont (California) Earthquake Exhibit on the Hayward fault, Contracted by U.S. Geological Survey, Math Science Nucleus, and the 1906 Centennial Alliance, 2006
Research Geologist, Earthquake Hazard Team, U.S. Geological Survey, 1999-2006
Consulting Geologist, J.E. Fuller Hydrology and Geomorphology, Inc., 1998
Field Geologist, Arizona Geological Survey, 1997-1998
Geology Research Fellow, Associated Western Universities, NW, 1994-1996
Soils Laboratory Technician, Westinghouse Hanford Company, 1991-1993

Peer Reviewer

- Bulletin of the Seismological Society of America
- Journal of Geophysical Research

Professional Affiliations

- Association of Engineering and Environmental Geologists (member)
- Geological Society of America (member)
- American Geophysical Union (member)
- Seismological Society of America (member)