

DEGREES

Ph.D. University of Oregon, Geological Sciences, March 2005

Earthquakes to Mountains: Fault Behavior of the San Andreas Fault and Active Tectonics of the Chinese Tian Shan

B.S. University of Washington, Geological Sciences, 1996

A Revised Method for the Determination of Particle Size Distribution in Fault Gouge

PROFESSIONAL HISTORY

Assistant Professor, Appalachian State University, 2005-present

Postdoctoral Researcher, University of Oregon, Spring, 2005

Senior Staff Geologist, URS -Woodward Clyde, Phoenix, AZ, 1997-1999

NAGT Internship, USGS, Menlo Park, CA, Summer 1996

Teacher, English for Speakers of Other Languages (ESOL) and General Education Degree (in Spanish) mathematic preparatory courses, 1997

SENIOR THESIS ADVISOR

Chesney Gilleland (2009): *Short-term slip rates at the Frazier Mountain Paleoseismic site, San Andreas fault, CA*. Currently graduate student at University of Nebraska, Lincoln.

Aaron Pruitt (2009): *Micro-tectonic evolution of the Littlerock Paleoseismic site, San Andreas fault, CA*. Currently graduate student at University of Wisconsin, Madison.

Teri Gerard (2008): *Re-dating Pallett Creek paleoearthquakes with AMS Carbon-14 techniques*. M.S. University of Wisconsin, Milwaukee, 2010, currently Ph.D. candidate.

Evan Howell (2007): *Assessing debris flow probability of recently burned basins in the San Gabriel Mountains, CA*. Currently graduate students at Northern Arizona University.

PUBLICATIONS

Scharer, K.M., Biasi, G.P., Weldon, R.J., Fumal, T.E., 2010. Quasi-periodic recurrence of large earthquakes on the southern San Andreas fault, *Geology*, 38, 555-558.

Scharer, K.M., 2010. Changing views of the San Andreas fault, *Science*. 327, 1089.

Philibosian, B., Fumal, T. E., Weldon II, R. J., Kendrick, K. J., **Scharer, K. M.**, Bemis, S. P., Burgette, R. J., and Wisely, B. A., 2009. Photomosaics and logs of trenches on the San Andreas Fault near Coachella, California: *U.S. Geological Survey Open-File Report 2009-1039*, 2 sheets [<http://pubs.usgs.gov/of/2009/1039/>].

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- Weldon, R. J., Fletcher, D. K., Weldon, E. M., **Scharer, K. M.**, McCrory, P. A., 2003. An update of Quaternary faults of central and eastern Oregon, *U.S. Geological Survey Open-File Report 02-301*, 26 map sheets, scale 1:100,000, 1 CD-ROM.
- Weldon, R. J. II, Fumal, T. E., Powers, T. J., Pezzopane, S. K., **Scharer, K. M.**, Hamilton, J. C., 2002. Structure and earthquake offsets on the San Andreas fault at the Wrightwood, California paleoseismic site, *Bulletin of the Seismological Society of America*, 92, 2704-2725.
- Chen, J., Burbank, D. W., **Scharer, K. M.**, Sobel, E., Jinhui, Y., Rubin, C., Ruibin, Z., 2002. Magnetostratigraphy of the upper Cenozoic strata in the southwestern Chinese Tian Shan; rates of Pleistocene folding and thrusting, *Earth and Planetary Science Letters*, 195(1-2), 113-130.
- Jayko, A., Green, N., **Scharer, K. M.**, 1996. Plio-Pleistocene strain rates associated with regional folding, Sonoma California. *Toward Assessing the Seismic Risk Associated with Blind Thrust Faults, San Francisco Bay Region, California*, USGS Open File Report # 096-0267.

Publications in Chinese:

- Chen Jie, Heermance, R. V., Burbank, D. W., **Scharer, K. M.**, Wang, C. S., 2007. Magnetostratigraphy and Implications of the Xiyu conglomerate in the southwestern Chinese Tian Shan foreland, *Quaternary Sciences* (in Chinese with English abstract), 27(4), 576-587.
- Chen Jie, **Scharer K. M.**, Burbank D. W., 2005, Kinematic models of fluvial terraces over active folds: constraints on the growth mechanism and kinematics of the fault-related folds. *Seismology and Geology*, (in Chinese with English abstract). 27(4), 514-529.
- Chen Jie, **Scharer K. M.**, Burbank D. W., Heermance R., Wang Changsheng, 2005. Quaternary detachment folding of the Mingyaole anticline, southwestern Tian Shan, *Seismology and Geology*, (in Chinese with English abstract), 27(4), 530-547.

ABSTRACTS (STUDENTS ARE UNDERLINED)

- Biasi, G.P., and **Scharer, K.M.** 2010. A re-evaluation and comparison of paleoseismic earthquake dates for the Pallett Creek site on the southern San Andreas fault, *Seismological Research Letters*, Vol. 81, p. 347.
- Norman, J.R., Liutkus, C.M., Wright, J.D., **Scharer, K.M.**, Weldon, R.J., and Fumal, T.E., 2010. Stable isotope ecology of Holocene carbonates from the Frazier Mountain paleoseismic site, Southern California, Geological Society of America *Abstracts with Programs*, Vol. 42, No. 1, p. 163
- Scharer, K.M.**, Biasi, G.P., Weldon, R.J., Fumal, T. 2009. Statistics of long paleoearthquake records: Comparison of San Andreas Fault and Dead Sea Fault behavior, *EOS Trans. AGU*, 90(52), *Fall Meet. Suppl.*, Abstract NG23B-1091.
- Weldon, R. and **Scharer, K.M.**, 2009, The Frazier Mountain paleoseismic site on the Big Bend portion of the San Andreas Fault, A.D. 1480 to Present, *EOS Trans. AGU*, 90(52), *Fall Meet. Suppl.*, Abstract S41A-1893.
- Pruitt, A.H., **Scharer, K.M.**, Fumal, T.E., Weldon, R.J., Gilleland, C.L., and Sickler, R., 2009. Microgeomorphic reconstruction to determine slip rate on the San Andreas fault near Littlerock, CA, *2009 SCEC Annual Meeting poster*, 1-125.
- Scharer, K.M.**, Biasi, G.P., Weldon, R.J., and Gerard, T., 2009. Resampling and AMS re-dating applied to Pallett Creek earthquakes, *2009 SCEC Annual Meeting poster*, 1-126.
- Scharer, K.**, Weldon, R., Fumal, T., Liutkus, C., Zachariesen, J., Norman, J., Gibson, B., Alba, S., Weldon, N., Swanson, C., and Hilden, C., 2009. Frazier Mountain: Abundant ruptures, transtension, and sediment, A.D. 1480 to present, *2009 SCEC Annual Meeting poster*, 1-124.
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- Weldon, R., Scharer, K., Sickler, R., Pruitt, A., Gilleland, C., and Garroway, J., 2008, Slip rate site on the San Andreas fault near Littlerock, CA, *2008 SCEC Annual Meeting poster* 2-053.
- Scharer, K.M.**, Gerard, T.L., and Weldon, R.J., 2008. Old earthquakes, new dates: AMS 14C dates on charcoal from Pallett Creek, *SCEC Annual Meeting, Proceedings and Abstracts*, XVIII, 166.
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- Gerard, T.** and **Scharer, K.**, 2008. Re-dating Pallett Creek paleoearthquakes with AMS carbon-14 techniques, Geological Society of America (SE Section) *Abstracts with Programs*, Vol. 40, No. 4, p. 61.
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- Scharer, K.**, 2007. Earthquakes affect size, not frequency of debris flows in San Gabriel Mountains, CA, *Geological Society of America Abstracts with Programs*, Vol. 39, No. 6, p. 179.
- Scharer, K.**, Weldon, R. Dawson, T., Sickler, R., Sheridan, H., **McGinnis, K.**, **Gerard, T.**, Weldon, N., and Hunt, S., 2007. Evidence for 4-5 earthquakes at the Frazier Mountain paleoseismic site since A.D. 1400, *SCEC Annual Meeting, Proceedings and Abstracts*, Vol XVII.
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- Scharer, K. M.** Weldon II, R. J., Burgette, R. J., Thompson, S. C. Burbank, D. W., 2005. Fluvial terrace deformation over active folds: How are fold style and deformation rates across the Tian Shan captured by geomorphic markers?, *Hokudan 2005 International Symposium on Active Faulting*.

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