

EDWARD A. KELLER

**Environmental Studies and Department of Earth Science
University of California Santa Barbara, California 93106**

VITA (2019)

EDUCATIONAL BACKGROUND:

Degree Institution

- B.S. California State University, Fresno
- B.A. California State University, Fresno
- M.S. University of California, Davis
- Ph.D. Purdue University

ACADEMIC EXPERIENCE:

1. University of North Carolina 1973-76. Assistant Professor : Teaching and research in earth surface processes and landforms, fluvial processes, and environmental geology
2. UCSB 1976 to present, Assistant to Full Professor: Teaching and research in geomorphology, environmental studies, earth science, environmental / engineering geology
3. Chair (three times, late 1990s to early 2000s) of the UCSB Environmental Studies Program and Hydrologic Science Program

RESEARCH INTERESTS:

Earth Surface Processes, Environmental Science, Surface Water Hydrology, and Environmental / Engineering Geology

HONORS AND AWARDS:

1. Don J Easterbrook, Distinguished Scientist Award, Geological Society of America, 2004
2. Quatercentenary Fellowship, Michaelmas Term, Emmanuel College, Cambridge Univ., UK, 2000
3. Outstanding Outreach, Southern California Earthquake Center, 1999
4. Distinguished Alumni, California State University, Fresno, 1998
5. Distinguished Alumni Award, Purdue University School of Science, 1996
6. Outstanding Alumnus Award, Purdue University, Department of Earth and Atmospheric Sciences, 1994
7. Sigma Xi National Lecturer, 1983-85
8. Hartley Visiting Professor Award, The University of Southampton, England, 1982-83
- 9.

PROFESSIONAL MEMBERSHIPS:

- The Society of Sigma Xi
- The Geological Society of America (Fellow)

- American Geophysical Union (Hydrogeology Section)

GRANTS

1. Water Resources Research Grant; "Use of Fluvial Processes to Minimize Adverse Effects of Stream Channelization," 1975-78, \$69,000, N. C. Water Resources Research Institute and U. S. Office of Water Resources Research
2. U. S. Geological Survey, Earthquake Hazards Reduction Grant, "Tectonic Geomorphology and Possible Future Seismic Activity of the Central Ventura Basin, California," 1978-79, \$70,000
3. Water Resources Research & U. S. Forest Service and U. S. Park Service, Contracts and Grants, "Effects of Large Organic Debris on Channel Form and Fluvial Processes," 1978-80, \$33,000
4. U. S. Geological Survey, Earthquake Hazards Reduction Program Grant, "Paleomagnetic Dating of Holocene Deposits Along the San Andreas Fault in Southern California," 1979-80, \$46,000
5. Water Resources Research Grant, "Large Organic Debris and Anadromous Fish Habitat in the Coastal Redwood Environment," 1980-82, \$55,974
6. U. S. Geological Survey, Earthquake Hazards Reduction Program Grant, "Soil Chronosequences as Instruments for Dating Holocene and Late Pleistocene Faulting, Western Transverse Ranges," California, 1981-82, \$70,000
7. Water Resources Research Grant, "Cold Pools and Their Importance for Enhancement of Anadromous Fish Habitat in Northern California Coastal Streams," 1982-83, \$15,000
8. Water Resources Research Grant (with Julia Allen), "Long Term Monitoring and Analysis of Water, Sediment, and Nutrient Budgets in Coastal Mountain Streams," 1984-86, \$32,000
9. U. S. Geological Survey, Earthquake Hazards Reduction Program Grant, "Late Pleistocene- Holocene Soil Chronology for Evaluating Tectonic Framework and Events," 1984-85, \$50,000
10. U. S. Geological Survey, Earthquake Hazards Reduction Program Grant, "Source and Seismic Potential Associated with Reverse Faulting and Related Folding," 1986-87, \$60,000
11. Water Resources Research Grant (with Frank Davis), "Recovery of the Riparian Zone Following Chaparral Wildfire," 1986-88, \$30,000
12. U. S. Geological Survey, Earthquake Hazards Reduction Program Grant, "Quaternary Tectonic Framework and Earthquake Hazard in Fold-and-Thrust Belts of the Western Transverse Ranges, California," 1987-89, \$63,000
13. Water Resources Center, "Hydrologic Response of Small Watersheds to Wildfire," 1991-93, \$40,000
14. National Science Foundation, Southern California Earthquake Center, "Tectonic Geomorphology of the Los Angeles Basin," 1991-92, \$35,000.
15. U. S. Geological Survey, Earthquake Hazards Reduction Program, "Investigations in Areas of Subsidence in the Onshore Fold and Thrust Belt of the Cascadia Subduction Zone," 1991-92, \$41,000

16. U. S. Geological Survey, Earthquake Hazards Reduction Program, "Latest Pleistocene to Holocene Rupture History of the Santa Cruz Island Fault," 1992-93, \$40,000
17. University of California Santa Barbara, College of Letters and Science, "Undergraduate Research Initiation at Santa Cruz Island," 1994, \$14,000
18. University of California Santa Barbara, Office of the Executive Vice Chancellor and Office of the Associate Vice Chancellor for Research, outreach portion of the "South Coast Earthquake Project (SCEP)," 1995, \$10,000.
19. National Science Foundation, Southern California Earthquake Center, "Earthquake Hazard: Ventura-Santa Barbara," 1995, \$24,000.
20. National Science Foundation, Southern California Earthquake Center, "Correlation of Uplifted Marine Terraces," 1997, \$15,000.
21. U. S. Geological Survey, Earthquake Hazards Reduction Program, "Earthquake Hazard of the Santa Barbara Fold Belt," 1996, \$76,000.
22. National Science Foundation, "Investigation of a very rapid tectonic process: Direction and rates of lateral propagation of reverse faulting and folding," 1998-2001, \$165,000.
23. Department of Interior, total support \$50,000.00 for "Earthquake Hazard of the Santa Barbara Fold Belt."
24. Cal Department of Parks and Recreation, total support, 1999, \$8000 for "Gaviota Creek Fish Passage Enhancement."
25. Department of Interior, total support, 2000, \$7500 for "Quaternary Geology of the Santa Barbara Urban Corridor: Santa Barbara Quadrangle."
26. University of California Energy Institute. "Hydrocarbon emissions from natural seeps." \$30,000. 2003-2004.
27. Southern California Earthquake Center (SCEC). "Seismic Hazards Associated with active Deformation within the Camarillo Fold Belt, Western Transverse Ranges, Southern California." Funded at the amount \$25,000. 2006.
28. USGS National Earthquake Reduction Program (NEHRP). "Earthquake Hazard of the Camarillo Fold Belt: An Analysis of the Unstudied Fold Belt in the southern California 'Hot Zone.'" Funded at the amount of \$60,000. 2007.
29. Southern California Earthquake Center (SCEC), "Active Tectonics of the Camarillo Fold Belt: Establishing the Chronology." Funded at the amount of \$25, 000. 2008
30. USGS National Earthquake Reduction Program (NEHRP). "Earthquake Hazard of the Camarillo Fold Belt: An Analysis of the Unstudied Fold Belt in the southern California 'Hot Zone.'" \$59, 000. 2008.
31. National Science Foundation. "Rapid Montecito debris flow." ~\$ 20,000. 2018.
32. Montecito Resilience. \$14,000. 2018.
33. Montecito Resident. \$150,000. 2019

PUBLICATIONS: RA is a refereed journal article, B is a book, BC is a book chapter, FG is a field guide book, CP is a conference proceedings article, and RP is a research report.

1970

1. Keller, E. A. Bed-load movement experiments: Dry Creek, California. *Journal of Sedimentary Petrology* 40 (4): 1339-1344 (RA)

1971

2. Keller, E.A. Areal sorting of bed-load material: the hypothesis of velocity reversal. *Geol. Soc. Amer. Bull.* 82: 753-756. (RA)
3. Keller, E. A. Pools, riffles, and meanders: discussion. *Geol. Soc. Amer. Bull.* 82:279-280. (RA)

1972

4. Keller, E.A. Development of alluvial stream channels: a five stage model. *Geol. Soc. Amer. Bull.* 83: 1531-1536. (RA)
5. Keller, E.A. Areal sorting of bed-load material: the hypothesis of velocity reversal: reply. *Geol. Soc. Amer. Bull.* 83: 915-918. (RA)
6. Coffman, D.M., Keller, E.A., and Melhorn, W.N. A new topological relationship as an indicator of drainage network evolution. *Water Resources Research* 8(6): 1497-1505. (RA)

1973

7. Melhorn, W.N., and Keller, E.A. Landscape aesthetics numerically determined: applications in highway corridor selection. *Highway Research Record* 452: 1-9. (RA)
8. Keller, E.A., and Melhorn, W.N. Bedforms and fluvial processes in alluvial stream channels: selected observations. *Proceedings of the Fourth Annual Geomorphology Symposia Series, in Fluvial Geomorphology*, Morisawa, Marie (ed.), *Publications in Geomorphology*, State University of New York, Binghamton, New York, Chapter 11, pp. 253-284. (Invited contribution.) (BC)

1974

9. Keller, E.A. Development of alluvial stream channels: a five stage model: reply. *Geol. Soc. Amer. Bull.* 84: 150-152. (RA)
10. Keller, E.A., and Melhorn, W.N. Form and fluvial processes in alluvial stream channels. *Studies in Fluvial Geomorphology*, No. 2, Purdue University, Water Resources Research Center, T.R. 47, 124 p. (RP)

1975

11. Melhorn, W.N., Keller, E.A. and McBane, R.A. Landscape aesthetics numerically defined. *Studies in Fluvial Geomorphology*, No. 1, Purdue University, Water Research Center, T.R. No. 37, 101 p.(RP)
12. Keller, E. A. Channelization: a search for a better way. *Geology* 3(5): 246-248. (RA)

1976

13. Keller, E.A., and Hoffman, E.K. Channel restoration: a sensible alternative to channelization. *Public Works*, Oct.: 70-72. (RA)
14. Keller, E.A. *Environmental Geology*. Charles E. Merrill Publishing Co., Columbus, Ohio, 496 p. (B)
15. Keller, E.A. Channelization: environmental, geomorphic and engineering aspects. *Geomorphology and Engineering*, Chapter 7, D.R. Coates (ed.), Dowden, Hutchinson and Ross, Inc., pp. 115-140.(Invited contribution). (BC)

1977

16. Keller, E.A. Fluvial systems: selected observations. In *Riparian Forests in California: Their Ecology and Conservation*, Anne Sands (ed.), University of California, Davis, Institute of Ecology, Publication No. 15, Chapter 5, pp. 39-46. (BC)
17. Keller, E.A., and Hoffman, E.K. Urban streams: sensual blight or amenity. *Journal of Soil and Water Conservation* 32(5): 237-240. (RA)

1978

18. Keller, E.A., and Melhorn, W.N. Rhythmic spacing and origin of pools and riffles. *Bulletin of the Geological Society of America* 89: 723-730. (RA)
19. Keller, E.A. Pools, riffles and channelization. *Environmental Geology* 2(2): 119-127. (RA)

1979

20. Keller, E.A., and Tally, T. Effects of large organic debris on channel form and process in the coastal redwood environment. In *Adjustments of the Fluvial System*, D. D. Rhodes and G. P. Williams (eds.), *Proceedings of the Tenth Annual Geomorphology Symposia*. Kendall/Hunt Pub. Co., Dubuque, Iowa, pp. 169-98. (BC)
21. Nunnally, N.R., and Keller, E.A. Use of fluvial processes to minimize adverse effects of stream channelization. *Water Resources Research Institute Report No. 144*. The University of North Carolina, 115 p. (RP)

22. Keller, E.A. Environmental Geology, Second Ed. Charles E. Merrill Publishing Co., Columbus, Ohio, 547 p. (B)
23. Keller, E.A. and Swanson, F.J. Effects of large organic material on channel form and fluvial process. *Earth Surface Processes* 4(4): 361-380. (RA)
24. Norris, R.M., Keller, E.A., and Meyer, G.L. Geomorphology of the Salton Basin, California: selected observations. In Abbott, P.L. (ed.), *Geological Excursions in the Southern California Area*. Geol. Society of Amer., Field Guide. National Meeting, Department of Geology, San Diego State University, pp. 19-46. (FG)

1980

25. Keller, E.A., Johnson, D.L., Clark, M.N. and Rockwell, T.K. Tectonic geomorphology and earthquake hazard, north flank central Ventura basin, California. Final Report, U. S. Geol. Survey Contract 14-08-0001-17678. (RP)
26. Keller, E.A., MacDonald, A., and Tally, T. Effect of large organic debris on channel morphology and process in the streams of Redwood National Park. *Proceedings of the Second Conference on Scientific Research in the National Parks*, Amer. Institute of Biological Sciences and National Park Service. NPS 1st-80/02-S (NTIS) U.S.P. 254-273. (CP)

1981

27. Yeats, R.S., Clark, M.N., Keller, E.A., and Rockwell, T.K. Active fault hazard in southern California: Ground rupture vs. seismic shaking. *Geol. Soc. Amer. Bull.* 92: 189-196. (RA)

1982

28. Keller, E.A., Bonkowski, M.S., Korsch, R.J., and Shlemon, R.J. Tectonic geomorphology of the San Andreas fault zone in the southern Indio Hills, Coachella Valley, California. *Geol. Soc. Amer. Bull.* 93: 46-56. (RA)
29. Keller, E.A. Environmental Geology, Third Ed. Charles E. Merrill Publishing Co., Columbus, Ohio, 526 p. (B)
30. Burchfield, B.C., Foster, R.J., Keller, E.A., Melhorn, W.N., Brookins, D.B., Mintz, L.W., and Thurman, H.U. *Physical Geology*. Charles E. Merrill Publishing Co., Columbus, Ohio, 501 p. (B)
31. Botkin, D.B. and Keller, E.A. *Environmental Studies: The Earth as a Living Planet*. Charles E. Merrill Publishing Co., Columbus, Ohio, 506 p. (B)
32. Keller, E.A., D. L. Johnson, T. K. Rockwell, M. N. Clark, and G. R. Dembroff. Tectonic geomorphology of the Ventura, Ojai and Santa Paula areas, western Transverse Ranges, California. (In) Cooper, J. D. (ed.), *Neotectonics in*

Southern California. Geol. Soc. Amer. Guidebook. 78th Annual Meeting of the Cordilleran Section, pp. 25-42. (FG)

33. MacDonald, A., Keller, E.A., and Tally, T. The role of large organic debris on stream channels draining redwood forests, northwestern California. In Friends of the Pleistocene Guidebook, Late Cenozoic History and Forest Geomorphology of Humboldt County, California, pp. 226-245. (FG)
34. Keller, E.A. and Hofstra, T.D. Summer "cold pools" in Redwood Creek near Orick, California. In Friends of the Pleistocene guidebook, Late Cenozoic History and Forest Geomorphology of Humboldt County, California, pp. 205-211. (FG)
35. Dembroff, G.R., Johnson, D.L., Keller, E.A., and Rockwell, T.K. The Soil Geomorphology and Neotectonics of the Ventura River and Central Ventura Basin, California: A Fieldguide. (Prepared for the Soil Geomorph. Tour (Div. S-5), Dec. 2-3, 1982 Ann. Meetings Am. Soc. Agron., Crop Sci. Soc. Am., and Soil Sci. Soc. Am.) (FG)

1983

36. Keller, E.A. Bed material sorting in pools and riffles: discussion. Amer. Soc. Civil Engineers, Journal of Hydraulics 109: 1243-1245. (RA)
37. Keller, E.A., and Hofstra, T.D. Summer "cold pools" in Redwood Creek near Orick, California and their importance as habitat for anadromous salmonids. In Van Riper, III, C., Whittig, L.D., and Murphy, M.L. (eds.), Proceedings of the First Biennial Conference of Research in California's National Parks, University of California, Davis (1982), p. 221-225. (CP)

1984

38. Keller, E.A. and Rockwell, T.K. Tectonic geomorphology, Quaternary chronology, and paleoseismicity. In Costa, J.E. and Fleisher, P.J. (eds.) Developments and Applications of Geomorphology. Springer-Verlag, New York, pp. 203-239 (invited contribution). (BC)
39. Rockwell, T.K., Keller, E.A., Clark, M.N., and Johnson, D.L. Chronology and rates of faulting of Ventura River terraces, California. Geol. Soc. Amer. Bull. 95: 1466-1474. (RA)
40. Keller, E.A. and Brooks, A. Consideration of meandering in channelization projects: selected observations and judgments. Proceedings of the Conference Rivers 1983, American Society of Civil Engineers, pp. 384-397 (invited contribution). (BC)

1985

41. Keller, E.A. *Environmental Geology*, Fourth Ed., Charles E. Merrill Publishing Co., Columbus, Ohio, 480 p. (B)
42. Keller, E.A., Johnson, D.L., and Rockwell, T.K. Late Pleistocene-Holocene soil chronology for evaluating tectonic framework and events. U. S. Geological Survey Open-File Report 85-464, p. 538-546. (RP)
43. Rockwell, T.K., Keller, E.A., and Johnson, D.L. Tectonic geomorphology of alluvial fans and mountain fronts near Ventura, California. In M. Morisawa and J. T. Hack (eds.) *Tectonic Geomorphology*. Proceedings of the 15th Annual Geomorphology Symposium, Allen & Unwin Publishers, Boston, Ch. 8, p. 183-207 (invited contribution). (BC)
44. Rockwell, T. K., Johnson, D.L., Keller, E.A., and Dembroff, G.R. A late Pleistocene-Holocene soil chronosequence in the Ventura basin, southern California, USA. In Richards, K.S., Arnett, R.R. and Ellis, S. (eds.) *Geomorphology and Soils*. George Allen and Unwin, Boston, Ch. 16, p. 309-327 (invited contribution). (BC)
45. Keller, E.A., Zepeda, R.L., Laduzinsky, D.M., Seaver, D.B., and Zhao, E.X. Late Pleistocene-Holocene soil chronology for evaluating tectonic framework and events, Transverse Ranges, California. U. S. Geological Survey Open-File Report 86-31, p. 630- 640. (RP)

1986

46. Keller, E.A. Investigations of active tectonics: Use of surficial earth processes. In *Active Tectonics*, National Academy Press, Washington, D. C., p. 136-147 (invited contribution). (BC)
47. Keller, E.A. Source and seismic potential associated with reverse faulting and related folding. J. S. Geological Survey Open-File Report 86-383, p. 180-181. (RP)
48. Best, D.W. and Keller, E.A. Sediment storage and routing in a steep boulder-bed rock- controlled channel. In DeVries, J.J. (ed.) *Proceedings of the 1985 Chaparral Ecosystems Research Symposium*, Santa Barbara, California, pp. 45-55. (CP)

1987

49. Keller, E.A. Source and seismic potential associated with reverse faulting and related folding. U. S. Geological Survey Open-File Report 87-374, p. 182-183. (RP)
50. Botkin, D. B. and Keller, E.A. *Environmental Studies: Earth as a Living Planet*, Second Ed., Charles E. Merrill Publishing Co., Columbus, Ohio, 685 p. (RP)

51. MacDonald, A. and E. A. Keller. Stream channel response to the removal of large woody debris, Larry Damm Creek, northwestern California. In *Erosion and Sedimentation in the Pacific Rim. Proceedings of the Corvallis Symposium*, August, IAHS Publ. No. 165. p. 405-406. (CP)
52. Florsheim, J. L. and E. A. Keller. Relationships between channel morphology, unit stream power, and sediment routing and storage in a steep, bedrock controlled channel. In *Erosion and Sedimentation in the Pacific Rim. Proceedings of the Corvallis Symposium*, August, IAHS Publ. No. 165, p. 279-280. (CP)

1988

53. Keller, E. A. *Environmental Geology*, Fifth Ed., Charles E. Merrill Publishing Co., Columbus, Ohio, 540 p. (B)
54. Keller, E. A. Quaternary tectonic framework and earthquake hazard in fold-and-thrust belts of the western Transverse Ranges, California. U. S. Geological Survey Open-File Report 88-673, p. 153. (RP)
55. Rockwell, T. K., E. A. Keller, and G. R. Dembroff. Quaternary rate of folding of the Ventura River anticline, western Transverse Ranges, southern California. *Geol. Soc. Amer. Bull.* 100, 850-858. (RA)
56. Keller, E. A. Estimating timing of fault activity on uplifted wave-cut platforms. *Bulletin of the Association of Engineering Geologists*, v. XXV, No. 4, p. 505-507. (RA)
57. Higgins, C. G., Coats, D. R., Baker, V. B., Dietrich, W. E., Dunne, T., Keller, E. A., Norris, R. M., Parker, G. G. Sr., Pavich, M., Pewe, T. L., Robb, J. M., Rogers, J. D. and Sloan, C. E. Landform development. In *Hydrogeology*, Back, W., Rosenhein, J. S. and Seaber, P. R. (eds.), *The Geology of North America*, Vol. 0-2. The Geological Society of America, Ch. 42, pp. 383-401.(BC)

1989

58. Faber, P. M., E. A. Keller, A. Sanda and B. M. Massey. The ecology of riparian habitats of the southern California coastal region: A community profile. *Biological Report 85 (7.27)*. U. S. Department of Interior, Fish and Wildlife Service, 152 p. (BC)
59. Keller, E. A., Johnson, D. L., Laduzinsky, D. M., Rockwell, T. K., Seaver, D. B., Zepeda, R. L. and Zhao, X. Tectonic geomorphology and late Pleistocene soil chronology of the Wheeler Ridge, San Emigdio Mountains and Frazier Mountain areas. *Pacific Cell, Friends of the Pleistocene Guidebook*, 125 p. (FG)
60. Davis, F. W., Keller, E. A., Parikh, A., and Florsheim, J. Recovery of the chaparral riparian zone after wildfire. In: *Proceedings of the California Riparian*

Systems Conference, Sept. 22-24, 1988, Davis, California. USDA Forest Service Technical Report PSW-110, pp. 194-203. (CP)

1990

61. Johnson, D. L., E. A. Keller, and T. K. Rockwell. Dynamic pedogenesis: New views on some key soil concepts, and a model for interpreting Quaternary soils. *Quaternary Research* 33: 306-319. (RA)
62. Keller, E.A., and Kondolf, G.M. Groundwater and fluvial processes; Selected observations, with case studies by Hagerty, D.J., and Kondolf, G.M., In Higgins, C.G., and Coates, D.R., *Groundwater geomorphology; The role of subsurface water in Earth- surface processes and landforms: Boulder, Colorado*, Geological Society of America Special Paper 252. (RA)

1991

63. Florsheim, J.L., Keller, E.A., and Best, D.W. Fluvial sediment transport in response to moderate storm flows following chaparral wildfire, Ventura County, southern California. *The Geological Society of America Bulletin*. 103: 504-511. (RA)
64. Springer, D.S., Keller, E.A., Everett, L.G., and Lawrence, A.E. Laboratory demonstration of hydrocarbon migration in the Vadose Zone: effectiveness of the U-tube design for underground storage tank leak detection monitoring. *Ground Water Monitoring Review* 11 (4): 133-138. (RP)
65. Kondolf, E.M., and Keller, E.A. Management of urbanizing watersheds. In J. J. DeVrier (ed.) *California Watersheds at the Urban Interface. Proceedings of the Third Biennial Watershed Conference*. California Water Resources Center: 27-39. (CP)
66. Pinter, N., and Keller, E.A. Comment on surface uplift, uplift of rocks and exhumation of rocks. *Geology* 19 (10): 1053. (RA)
67. Keller, E.A., Yeats, R.S., Rockwell, T.K., and Johnson, D.L. Overview of active tectonics. In E.A. Keller (ed.) *Active Folding and Reverse Faulting in the western Transverse Ranges, southern California*. Geol. Soc. Amer. Guidebook. 1991 Annual Meeting, pp. 1-12. (FG)
68. Zepeda, R. L., Keller, E.A., and Rockwell, T.K. Tectonic geomorphology of Wheeler Ridge. In E. A. Keller (ed.) *Active Folding and Reverse Faulting in the western Transverse Ranges, southern California*. Geol. Soc. Amer. Guidebook. 1991 Annual Meeting, pp. 37-45. (FG)
69. Zhao, X., Keller, E.A., and Johnson, D.L. Tectonic geomorphology of the Frazier Mountain area. In E. A. Keller (ed.) *Active Folding and Reverse Faulting in the western Transverse Ranges, southern California*. Geol. Soc. Amer. Guidebook. 1991 Annual Meeting, pp. 50-60. (FG)

70. Keller, E.A. (ed.) Active Folding and Reverse Faulting in the western Transverse Ranges, southern California. Geol. Soc. Amer. Guidebook. October 1991. (FG)

1992

71. Keller, E. A. Environmental Geology, 6th Ed., Macmillan Publishing Co., New York, New York, 521 p. (B)
72. Keller, E.A. and Capelli, M.H. Ventura River flood of February 1992: A lesson ignored? Water Resources Bulletin 28(5):813-832. (RA)

1993

73. Pinter, N. and Keller, E.A. Quaternary tectonic and topographic evolution of the northern Owens Valley. In the history of water: eastern Sierra Nevada, Owens Valley, White-Inno Mountains. White Mountain Research Station Symposium 4:32-39. (CP)
74. Keller, E.A. and Loaiciga, H.A. Fluid-pressure induced seismicity at regional scales. Geophysical Research Letters 20(16):1683-1686. (RA)
75. Keller, E.A. and Capelli, M.H. Reply to discussion Ventura River flood of February 1992: A lesson ignored? Water Resources Bulletin 29(5):1. (RA)
76. Keller, E.A. and J.L. Florsheim. Velocity - reversal hypothesis: A model approach. Earth Surface Processes and Landforms 18:733-748. (RA)

1994

77. Pinter, N., Keller, E.A., and West, R.B. Relative dating of terraces of the Owens River, northern Owens Valley, California, and correlation with moraines of the Sierra Nevada. Quaternary Research 42:266-276. (RA)

1995

78. Botkin, D.B. and Keller, E.A. Environmental Science, New York, John Wiley and Sons, 627 p. (B)
79. Pinter, N. and Keller, E.A. Geomorphological analysis of neotectonic deformation, northern Owens Valley, California. Geol. Rundsch 84:200-212. (RA)
80. Keller, E.A., Gurrola, L.D., Metcalf, J.G., and Dibblee Jr., T.W. Earthquake hazard of the Santa Barbara Fold Belt, California. Univ. of Calif. Santa Barbara. Institute for Crustal Studies 58 p. Guidebook. (FG)
81. Keller, E.A., MacDonald, A., Tally, T., and Merrit, N.J. Effects of Large Organic Debris on Channel Morphology and Sediment Storage in Selected Tributaries of Redwood Creek, Northwestern California. U.S. Geological Survey Professional Paper 1454, Geomorphic Processes and Aquatic Habitat in the

Redwood Creek Basin, Northwestern California. K. M. Nolan, H. M. Kelsey, and D. C. Marron, Editors. P1-P29. (RA)

82. Keller, E.A., Hofstra, T.D., and Moses, C. Summer Cold Pools in Redwood Creek Near Orick, California, and Their Relation to Anadromous Fish Habitat. U. S. Geological Survey Professional Paper 1454, Geomorphic Processes and Aquatic Habitat in the Redwood Creek Basin, Northwestern California. K. M. Nolan, H. M. Kelsey, and D. C. Marron, Editors. U1-U9. (RA)

1996

83. Keller, E.A. and MacDonald, A. River Channel Change: the role of large woody debris, in *Changing River Channels*, A. Gurnell and G. Petts (eds), New York, John Wiley and Sons., Ch. 10, pp. 217-235 (invited contribution). (BC)
84. Keller, E.A. and Pinter, N. *Active Tectonics, Upper Saddle River, New Jersey*, Prentice- Hall, 338 p. (B)
85. Keller, E.A. *Environmental Geology*, 7th Edition, Upper Saddle River, New Jersey, Prentice Hall, 560 p. (B)
86. Keller, E.A., Sanz De Galdeano, C., and Chacon, J. Tectonic Geomorphology and Earthquake Hazard of Sierra Nevada, Southern Spain. *Sierra Nevada 1^a Conferencia Internacional*, Granada. J. Chacón Montero, J. Luis Rosúa Campos, Editors. pp. 201-218 (invited contribution). (CP)
87. Keller, E.A. and Manalis, M.S. Environmental Studies Program: The UCSB Experience, in J. Chacon Montero and C. Irigaray Fernandez (eds). 6th Spanish Congress and International Conference on Environmental Geology and Land-Use Planning. v. 1. p. 11- 18 (invited contribution). (CP)
88. Keller, E.A., Sanz de Galdeano, C., and Chacon, J. Tectonic Geomorphology and Earthquake Hazard of Sierra Nevada, Southern Spain. In J. Chacon Montero and C. Irigaray Fernandez (eds). 6th Spanish Congress and International Conference on Environmental Geology and Land-Use Planning. v. 2. p. 327-388 (invited contribution). (CP)

1997

89. Keller, E.A., Valentine, D.W., and Gibbs, D.R. Hydrological Response of Small Watersheds Following the Southern California Painted Cave Fire of June 1990. *Hydrological Processes* 11:401-414. (RA)

1998

90. Botkin, D.B., and Keller, E.A. *Environmental Science* (2nd Edition), New York, John Wiley and Sons, Inc. (B)

91. Keller, E.A., Zepeda, R.L., Rockwell, T.K., Ku, T.L., and Dinklage, W.S. Active tectonics at Wheeler Ridge, southern San Joaquin Valley, California. *Geological Society of America Bulletin* 110:298-310. (RA)
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STATEMENT OF RESEARCH

My research efforts are divided into several areas of surface processes: the study of stream and river form and process and studies of Quaternary stratigraphy and tectonics as they relate to earthquake hazard, landslides, active folding, and mountain building. River studies focus on: 1) basic river processes associated with channel form, sediment sorting and routing, and sediment budgets; 2) the role of wildfire and the recurrence intervals of high magnitude flood deposits and debris flow deposits; 3) the role of large woody debris and other large roughness elements on channel form and process; 4) environmental effects of channelization; 5) river restoration and management; 6) flood hazard evaluation; and 7) understanding of ecologic factors associated with the habitat for the endangered southern California steelhead trout. This work has been mostly funded by the Water Resources Center at the University of California, Riverside. My research in active tectonics and

landslides has centered on the western Transverse Ranges of southern California. The objectives of that research are to: 1) establish the late Pleistocene through Holocene chronology; 2) estimate rates of recent tectonic activity; 3) determine the basic tectonic framework of the western Transverse Ranges; 4) provide a better understanding of mountain-building processes in active fold-and-thrust belts; 5) understand fault and fold growth, particularly lateral propagation; 6) understand the earthquake hazard of the Santa Barbara area; 7) understand the La Conchita landslide hazard; and 8) understand the 2018 Montecito Debris Flow. Funding for active tectonic and landslide studies has come from the U. S. Geological Survey's Earthquakes Reduction Program, the Southern California Earthquake Center, and the National Science Foundation.

EXPERT WITNESS

I have served as an Expert Witness over a period of several decades, mostly on landslide and flood cases, including:

1. Whitmann v. Watson, 2006, Flooding of San Antonio Creek near Oak View, CA. For defendant, settled.
2. Atkins v. County of Ventura. 2007. Land slides and flooding of Ventura River at river bluffs near Oak View, CA. For plaintiff, testified.
3. Harwin v. Carnesale, 2007. Property dispute. For plaintiff, settled.
4. Hobson v. Leavens, 2007. Alluvial fan flooding of the Ventura River. For plaintiff, testified.
5. Airport Ranch v. Beserra, 2008. For defendant, testified.
6. Dreamweaver v. Prudential, 2015. For defendant, settled.
7. Debris Flow El Capitan Camp. For Plaintiff, settled