

Vita, updated 08 Jan 2015
Frank J. Pazzaglia

Personal

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Professor Dept. of Earth and Environmental Sciences

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Research and Educational Interests

Tectonic Geomorphology; Quaternary Geology; Sedimentology and Stratigraphy; Geodynamics; The dynamic interaction between regional-scale surficial and lithospheric processes, passive and active continental margins; Paleoclimate; Relative influence of climatic and tectonic processes on landform evolution; River terraces and mechanisms of terrace genesis; GIS applications to geomorphology and surficial processes; compilation and quantitative manipulation of DEM data for descriptive, mapping, denudation, morphometric and hydrologic modeling applications; advanced working knowledge of ARC/INFO GIS and GMT.

Professional Preparation

Bachelor of Science in Geosciences, May 1986 from the Pennsylvania State University, Dr. T.W. Gardner, senior thesis advisor. Senior thesis: Geomorphic indicators of neotectonism of the Osa and Burica Peninsulas, southwest Costa Rica.

Master of Science in Geology, December 1989 from the University of New Mexico, Dr. S.G. Wells, advisor. Thesis title: Tectonic and climatic influences on the evolution of Quaternary depositional landforms along a segmented range-front fault, Sangre de Cristo Mountains, north-central New Mexico.

Doctor of Philosophy in Geosciences, May, 1993 from the Pennsylvania State University. Dr. T.W. Gardner, advisor. Thesis title: Tectonic geomorphology and late Cenozoic geology of the middle U.S. Atlantic passive margin.

NSF Post-Doctoral Research Fellow, 1993-94, Department of Geology and Geophysics, Yale University, Dr. Mark T. Brandon, research collaborator.

Appointments

<u>Co-Director</u>	2012 – 2013	Lehigh Field Camp, Dept of Earth and Environmental Sciences, Lehigh University.
<u>Co-Director</u>	July 2010–June 2012	Environmental Initiative Program, Lehigh University.
<u>Chair</u>	July 2007–2013	Dept of Earth and Environmental Sciences, Lehigh University.
<u>Professor</u>	August 2007–present	Dept of Earth and Environmental Sciences, Lehigh University.
<u>Director</u>	February, 2004–2012	Lehigh Field Camp, Dept of Earth and Environmental Sciences, Lehigh University.
<u>Associate Professor</u>	Aug 1999–2007	Department of Earth and Environmental Sciences, Lehigh University.

Assistant Professor Aug 1994–July 1999 Department of Earth and Planetary Sciences, Univ. of New Mexico, Albuquerque, NM.

NSF Postdoc Fellow July 1993-July 1994 Department of Geology and Geophysics, Yale University, New Haven, CT.

Graduate Fellow Aug 1990-May 1993 Earth System Science Research Fellowship and Shell Research Fellowship, Department of Geosciences, The Pennsylvania State Univ.

Principal investigator June 1990-June 1992 COGEOMAP surficial geologic mapping project for the Maryland Geological Survey and the United States Geological Survey.

Assistant Geologist June 1986- July 1987 Ground Water Quality Control Section, Division of Water Resources, New Jersey Department of Environmental Protection.

Awards and Honors

- Outstanding teaching award, University of New Mexico, 1998.
- Kirk Bryan Award for the best paper in Quaternary geology and geomorphology, Quaternary Geology and Geomorphology Division, Geological Society of America, 2002.
- Fellow, Geological Society of America, 2002.
- Lindback Teaching Award, Lehigh University, 2014.

Editorships

- Geology, Editorial Board, 1998-2001.
- Geological Society of America Bulletin, Associate Editor, 1999-2007; 2013-present.
- American Journal of Science, Associate Editor, 2002-present.
- Geografia Fisica e Dinamica Quaternaria, Associate Editor, 2003-2014.
- Geosphere, Associate Editor, 2005-2007.
- Lithosphere, Associate Editor, 2008-2012.

Funding Panel Service

- U.S. Geological Survey EDMAP Panel, 2000-2002.
- National Science Foundation, EAR-GEO-Geomorphology and Land Surface Dynamics, 2005-2007.

Funded Research

NSF, NASA, USGS, and EPA; *=current

- (25) Cities in the Fall Zone: Earthquake hazard, vulnerability, and resiliency in the U.S. mid-Atlantic region, Lehigh CORE, co-Pis: A. Meltzer, S. Friedman, J. Littau, J. Ricles, R. Sause, May, 2013 – May 2014, no-cost extension to May 2015; \$59,711.*
- (24) Reconciling physical and chemical profile in the complex soils of the Shale Hills CZO, co-P.I. with S. C. Peters, SSF subcontract from Penn State University, \$4,668.
- (23) Surficial Geologic Map of the South Anna River in the Ferncliff and Pendleton Quadrangles, Virginia: USGS-EDMAP, 29 May 2013-28 May 2014, co-P.I. with C. Berti, \$17,500.

- (22) National Science Foundation project OISE-1157746 CNIC: Understanding Continental Collision in the Betic Cordillera, Spain. August 2012-July 2013. PI D. Anastasio. \$28,539.
- (21) EarthScope RAPID: Geodetic and seismological response to the Mineral, VA Earthquake, 23 August, 2011; NSF-EarthScope; 10/15/11-12/31/14; 28,330.
- (20) Collaborative Research: Geologic, Tectonic, and Geodynamic Processes of the Eastern North American (ENAM) Passive Margin Workshop; NSF-EarthScope; 05/01/11-04/30/12; \$33,943.
- (19) Quantification of Unsteady Fault Slip and Fold Growth, Apennine Front, Italy; NSF-Tectonics; 09/15/08-09/31/11; \$302,551 (co-P.I. with Dave Anastasio and Ken Kodama).
- (18) Centennial Seismic Belt in Southwest Montana: Henry Gulch 7.5 min quadrangle (co-PI with Dave Anastasio); USGS-EDMAP program; 06/01/06-05/31/07; \$13,300.
- (17) Centennial Seismic Belt in Southwest Montana: Lima Dam 7.5 min quadrangle (co-PI with Dave Anastasio); USGS-EDMAP program; 06/01/06-05/31/07; \$14,500.
- (16) SGER: TCN, grain size, and the processes of erosion; National Science Foundation; 06/01/07 – 05/31/08; \$24,684.
- (15) Watershed assessment and management of the Saucon Creek Watershed; Pennsylvania Growing Greener fund, subcontract to Northampton Conservation district; 08/01/07-07/31/08; \$40,000.
- (14) Geologic Map and Cross-Section of Lehigh Gorge State Park, Pennsylvania; U.S. Geological Survey; 04/01/04 – 03/31/05; \$13,318.
- (13) Collaborative Research: Retreating-trench, Extension, and Accretion Tectonics (RETREAT): a Multidisciplinary Study of the Northern Apennines (w/ M. Brandon, S. Willett, D. Cowan, R. Bennett, P. Reiners, D. Granger, J. Park); NSF-Continental Dynamics (EAR-0207980); \$338,118.
- (12) Assessing the Interactive Effects of Land Use, Climate, and UV Radiation of River Ecosystems: Modeling Transparency and the Response of Biota to UVR; U.S. Environmental Protection Agency; (w/ D. Morris, C. Williamson); 06/01/02-05/31/07; \$825,850.
- (11) Surficial Geologic Map of the Jemez Springs Quadrangle, New Mexico; DOI-U.S. Geological Survey; 06/01/02-05/31/03; \$15,000.
- (10) Surficial Geological Map of the Ponderosa Quadrangle, New Mexico; DOI-U.S. Geological Survey; 06/01/01-05/31/02; \$15,000.
- (9) Collaborative Research. Lithospheric structure and evolution of the Rocky Mountains: Phase II – Geodynamic processes. (w/ K.E. Karlstrom); NSF-Continental Dynamics (EAR-0087526); 06/01/01-05/31/02; \$20,000.
- (8) Geomorphic and Geodynamic Response to Extension in Convergent Orogens (w/Selverstone and Roy); NSF-Tectonics; (EAR- 9902828); 06/01/99-05/31/01; \$83,021
- (7) Exhumation and Topographic Evolution in the Post-Orogenic Setting Determined by Apatite U-Th/He Dating (w/ Zietler, Idelman); NSF-Tectonics; (EAR- 9909393); 03/01/00-02/28/03; \$197,153.
- (6) REU (research experiences for undergraduates) senior thesis project funded by the National Science Foundation (K. Karlstrom, P.I.); 1996.
- (5) Variable hillslope processes and sediment delivery to tectonically-quiescent basins: A late Miocene through Quaternary record of buried, relict and modern hillslopes and their deposits. NSF - Geology and Paleontology; (EAR- 9706051); 01/01/98-12/31/99; \$95,000.

- (4) Lithospheric Structure and Evolution of the Rocky Mountain Transect of the Western U.S. NSF - Continental Dynamics. (EAR-9716787); 10/01/97-09/30/00; \$35,000.
- (3) Tectonic Geomorphology of the western Olympic Peninsula (EAR-9736748); 06/01/97-05/31/99; \$97,000.
- (2) Computational and GIS applications in quantitative geomorphologic analyses funded by the National Science Foundation (EAR-9509954); 06/01/95-05/31/96; \$22,000.
- (1) Postdoctoral research funded through a National Science Foundation Earth Sciences Postdoctoral Research Fellowship (EAR-9302661); 09/01/93-08/31/94; \$30,000.

Pending

- (2) Collaborative Research: ENIGMA-Eastern North America Intraplate Geodynamic Model of Active Tectonics; NSF IES Program, \$1,586,716, (\$3.25M total); 06/01/15-05/31/20.
- (1) Geomorphic expression of the seismotectonics and seismic potential of source zones in CEUS: CVSZ and Charleston; USGS Earthquake Hazards Program, \$57,197, 01 January 2015 – 31 December, 2015.

Submitted but not funded

- (33) Collaborative Research: Sources, causes, and persistence of active seismicity on a passive margin, an integrated seismic, geomorphic, and geodynamic approach, NSF-EarthScope, 01 Jan 2014 – 31 Dec 2016, co-PI.s: A. Meltzer, S. Stein, W. Holt, C. Berti, J. Stachnik, \$1,186,318.
- (32) Collaborative Research: Sources, causes, and persistence of active seismicity on a passive margin, an integrated seismic, geomorphic, geodetic, and geodynamic approach: NSF-EarthScope, 01/01/13-12/31/16; \$1,381,803 to Lehigh, \$2,302,565 Total.
- (31) Crack Arrest at Shale/Limestone interfaces for improved control of hydraulic fracturing in unconventional shale plays; USDOE DE-FOA-0000724; 01/01/13-12/31/15; (with H. Neid and R. Bocchini).
- (30) Collaborative Research: Seismic, geomorphic, and geodetic markers of passive margin tectonic processes; NSF-EarthScope; 01/01/12-12/31/17; \$1,229,586.
- (29) Collaborative Research: Regional geodynamic modeling of the North American Passive Margin with constraints from seismic, geomorphic, sedimentology, and tectonic history data; NSF-EarthScope; 05/01/12-04/30/16; \$174,297.
- (28) Knickpoint formation, evolution, and deformation in a passive margin setting; NSF-Geomorphology and Land Use Dynamics; 08/01/12-07/31/14; \$337,250.
- (27) How do Winter Melt Anomalies Respond to Climate Change and Impact Snowmelt Runoff in Western North America?; NSF-Hydrology; 08/01/11-07/31/14; \$479,666, (co-PI with Joan Ramage).
- (26) Geomorphic and DInSAR Approaches in Bridging the Temporal Gap in Fault Unsteadiness and Interseismic Deformation; NASA; 06/01/11-05/31/14; \$653,209.
- (25) In-Stream Geochemical and Hydrologic Controls on Natural Attenuation of Acid Mine Drainage; NSF-hydrology; 05/15/11-05/14/14; \$426,225 (co-PI with Steve Peters)
- (24) Using Microwave Satellite Observations of SWE and Melt to Predict Snowmelt Runoff Hydrographs in Large Northern Watersheds; NASA, 01/01/11-12/31/13; \$486,176 (co-PI with Joan Ramage).

- (23) WSC - Category 2: Nonlinear and Threshold Responses to Environmental Stresses in Land-River Network; NSF; 01/01/11-12/31/16; \$750,000 (co-PI with Ben Felzer).
- (22) Land use effects on dissolved organic carbon (DOC) production, microbial processing, lability, and transport in the fluvial system; NASA; 01/01/11-12/31/13; 285,112 (co-PI with Don Morris).
- (21) Evaluation of new remote sensing approaches to snow melt runoff calculation in Arctic rivers; NSF-Arctic Programs; 08/01/10-07/31/13; \$472,829 (co-PI. with Joan Ramage)
- (20) InSAR, tectonic geomorphology, and disequilibrium landscapes; NSF-Tectonics; 09/01/10 – 08/31/12; \$320,382.
- (19) Geomorphology, hydrology, and carbon export of natural and impacted watersheds; NSF GLUD; 01/01/10-12/31/12; \$348,501; (co-PI. with Hargreaves, Morris, Peters, Yu).
- (18) PIRE – MEDTEC: Mediterranean active tectonics, plate boundaries, and orogeny; NSF OISE-PIRE; 01/01/10-12/31/14; \$2,509,050.
- (17) Drainage basin hydrology at high latitudes: key processes and predicted responses to global change; NSF-Hydrology; 07/01/09-06/30/12; \$405,981 (co-P.I. with Joan Ramage).
- (16) Environmental Baseline for Ecosystem Preservation and Restoration in the Lehigh Valley; Cora Brooks Foundation; 01/31/08-01/30/09; \$15,000.
- (15) Collaborative Research: Seismic Coupling, Great Earthquakes, and Rock Uplift: A Broadband Geodetic Experiment for the Hellenic Forearc, Crete, Greece; National Science Foundation; 06/01/07-05/31/10; \$206,863.00.
- (14) Collaborative Research: Life History of an Emergent Fold; National Science Foundation; 08/01/07-07/31/09; \$247,880
- (13) Collaborative Research: Broadband geodesy, great earthquakes, and vertical tectonics of the Hellenic subduction zone, Crete, Greece; National Science Foundation; 06/01/06-05/31/08; \$240,210
- (12) Collaborative Research: Measuring subduction underplating using tectonic geomorphology in Crete, Greece; National Science Foundation; 06/01/05 – 05/31/07; \$166,946.
- (11) TCN, Grain Size, and the Processes of Erosion; National Science Foundation; 01/01/05 – 12/31/06; \$217,131.
- (10) Active Tectonics of Growing Transpressional Structures, an Integrated Geophysical and Geomorphological Approach; National Science Foundation; \$187,656.
- (9) Geoscience Education in Active Tectonics and Geologic Hazards; National Science Foundation; \$116,940.
- (8) Topographic Comparison of the Alpi Apuane, Thasos Island, and the Olympic Peninsula: To What Degree Can Tectonic Setting be Inferred from Digital Topography; NASA Washington; \$22,000.
- (7) Active Tectonics in the Inter-Andean Valley, Ecuador; National Geographic Society; \$15,000.
- (6) Soil development control on long-term landscape evolution: A case study in the San Bernardino Mountains, California, June 1, 2000 start date, 2 yr project.
- (5) Eroding the Appalachians, NSF Sedimentology and Paleontology June 1, 2000 start date, 3 yr project (with Paul Bierman).
- (4) Collaborative Research: Retreating Trench, Extension, and Accretion Tectonics (RETREAT) a multidisciplinary study of the northern Apennines. Proposal to NSF Continental Dynamics; \$1,705,000 total, \$370,000 Lehigh University.

- (3) TRACK 1: Geoscience Education in Active Tectonics and Geologic Hazards (w/ A. Meltzer, P. Zeitler, D. Anastasio, K. Kodama); NSF-Education (GEO-0224536); 01/01/03-12/31/04; \$156,498.
- (2) Active tectonics of growing folds: an integrated geophysical, structural, and geomorphological approach (w/ A. Meltzer, D. Anastasio); NSF-Tectonics; ~\$225,000.
- (1) Rock uplift and river incision: the roles of tectonics, climate and base level. (w/ E. B. Evenson); NSF, \$84,821

Other

- (7) Lehigh Faculty Research Grant, 2000, \$1,500.
- (6) Paleoseismicity and associated earthquake hazards of the Alamogordo fault, south-central New Mexico, State of New Mexico Department of Public Safety and Federal Emergency Management Agency; \$5,952.
- (5) U.S. Geological Survey Sky Village EDMAP, 1998; \$7,000.
- (4) U.S. Geological Survey Ojito Spring and Sky Village EDMAP 1997; \$22,000
- (3) U.S. Geological Survey Ojito Spring EDMAP 1996; \$15,000.
- (2) U.S. Geological Survey COGEOMAP, program; \$15,000.
- (1) Ph.D. research funded by the American Chemical Society, Petroleum Research Fund; \$30,000.

Publications

Refereed Journal and Edited Volumes (Jan, 2015 h-factor = 23)

- (60) Berti, C., Pazzaglia, F. J., Meltzer, A. S., and Harrison, R. J., **2014**, Geomorphic evidence for persistent, cumulative deformation of the Virginia Piedmont in the vicinity of the 23 August, 2011 Mineral earthquake: Geological Society of America Special Paper, 509, doi:10.1130/2015.2509(21).
- (59) Giachetta, E., Refice, A., Copolongo, D., Gasparini, N., and Pazzaglia, F. J., **2014**, Orogen-scale drainage network evolution and response to erodibility changes: insights from numerical experiments: Earth Surface Processes and Landforms, 39, 1259-1268.
- (58) Gallen, S. F., Wegmann, K. W., Bohnenstiehl, Pazzaglia, F. J., Brandon, M. T., and Fassoulas, C., **2014**, Active simultaneous uplift and margin-normal extension in a forearc high, Crete, Greece: Earth and Planetary Science Letters, 398, 11-24.
- (57) Gunderson, K. L., Pazzaglia, F. J., Picotti, V., Anastasio, D. J., Kodama, K. P., Rittenour, T., Frankel, K. F., Ponza, A., Berti, C., Negri, A., and Sabbatini, A., **2014**, Unraveling tectonic and climatic controls on synorogenic stratigraphy: Geological Society of America Bulletin, 126, 532-552.
- (56) McKeon, R. E., Zeitler, P. K., Pazzaglia, F. J., Idleman, B. D., and Enkelmann, E., **2013**, Decay of an old orogen: Inferences about Appalachian landscape evolution from low-temperature thermochronology: Geological Society of America Bulletin, doi: 10.1130/B30808.1.
- (55) Gunderson, K. L., Anastasio, D. J., Pazzaglia, F. J., and Picotti, V., **2013**, Fault slip rate variability on 10⁴-10⁵ yr timescales for the Salsomaggiore blind thrust fault, Northern Apennines, Italy: Tectonophysics, 608, 356-365.

- (54) DiNaccio, D., Boncio, P., Brozzetti, F., Pazzaglia, F. J., and Lavecchia, G., **2013**, Morphotectonic analysis of the Lunigiana and Garfagnana grabens (northern Apennines, Italy): Implications for active normal faulting: *Geomorphology*, 201, 293-311.
- (53) Pazzaglia F.J., **2013**, Fluvial Terraces, *in*, John F. Shroder (Editor-in-chief), Wohl, E. (Volume Editor), *Treatise on Geomorphology*, Vol 9, Fluvial Geomorphology, San Diego: Academic Press, p. 379-412.
- (52) Ferraris, F., Firpo, M., and Pazzaglia, F. J., **2012**, DEM analyses and morphotectonic interpretation: The Plio-Quaternary evolution of the eastern Ligurian Alps, Italy: *Geomorphology*, doi: 10.1016/j.geomorph.2012.01.009.
- (51) Wolin, E., Stein, S., Pazzaglia, F. J., Meltzer, A., Kafka, A., and Berti, C., **2012**, Mineral, Virginia earthquake illustrates seismicity of a passive-aggressive margin: *Geophysical Research Letters*, 39, doi:10.1029/2011GL050310.
- (50) Gunderson, K. L., Anastasio, D. J., Kodama, K. P., and Pazzaglia, F. J., **2012**, Rock-magnetic cyclostratigraphy for the late Pleistocene Stirone section, northern Apennine mountain front, Italy *in* Jovane, L., Housen, B., Herrero-Berrera, E., and Hinnov, L., eds., Temporal variation of geological processes revealed by magnetic methods: Geological Society of London, Special Publication 373, doi:10.1144/SP373.8
- (49) Bruno, P. P., Pazzaglia, F. J., and Picotti, V., **2011**, High-resolution shallow imaging of the northern Apennines mountain front near Bologna, Italy, using wide-aperture shallow seismic reflection data: *Geophysical Research Letters*, 38, L16302, doi:10.1029/2011GL047828.
- (48) Anastasio, D. J., Majerowicz, C. N., Pazzaglia, F. J., and Regalla, C. A., **2010**, Late Pleistocene – Holocene ruptures of the Lima Reservoir fault, SW Montana: *Journal of Structural Geology*, 32, 1996-2008, doi:10.1016/j.jsg.2010.08.012.
- (47) Ponza, A., Pazzaglia, F. J., and Picotti, V., **2010**, Thrust-fold activity at the mountain front of the northern Apennines (Italy) from quantitative landscape analysis: *Geomorphology*, 123, 211-231.
- (46) Wilson, L. F., Pazzaglia, F. J., and Anastasio, D. J., **2009**, A fluvial record of active fault-propagation folding, Salsomaggiore anticline, northern Apennines, Italy: *Journal of Geophysical Research*, 114, doi:10.1029/2008JB005984.
- (45) Picotti, V., Ponza, A., Pazzaglia, F. J., **2009**, Topographic expression of active faults in the foothills of the northern Apennines: *Tectonophysics*, 474, 285-294.
- (44) Belmont, P., Morris, D. P., Pazzaglia, F. J., and Peters, S. C., **2009**, Penetration of ultraviolet radiation in streams of eastern Pennsylvania: Topographic controls and the role of suspended particulates: *Aquatic Sciences*, DOI 10.1007/s00027-009-9120-7.
- (43) Wegmann, K. W. and Pazzaglia, F. J., **2009**, Late Quaternary fluvial terraces of the Romangna and Marche Apennines, Italy: Climatic, lithologic, and tectonic controls on terrace genesis in an active orogen: *Quaternary Science Reviews*, 28, 137-165, doi:10.1016/j.quascirev.2008.10.006.
- (42) Eppes, M. C., Bierma, R., Vinson, D., and Pazzaglia, F. J., **2008**, A soil chronosequence study of the Reno valley, Italy: insights into the relative role of climate verses anthropogenic forcing on hillslope processes during the mid-Holocene: *Geoderma*, 147, 97-107.
- (41) Picotti, V. and Pazzaglia, F. J., **2008**, A new active tectonic model for the construction of the Northern Apennines mountain front near Bologna (Italy): *Journal of Geophysical Research*, v. 113, doi:10.1029/2007JB005307.

- (40) Galster, J. C., Pazzaglia, F. J., and Germanoski, D., **2008**, Measuring the impact of urbanization on channel widths using historic aerial photographs and modern surveys: *Journal of the American Water Resources Association*, v. 44, 1-14.
- (39) Wegmann, K. W., Zureck, B. D., Regalla, C. A., Bilardello, D., Wolleburg, J. L., Kopczynski, S. E., Ziemann, J. M., Haight, S. L., Apgar, J. D., Zhao, C., and Pazzaglia, F. J., **2007**, Position of the Snake River watershed divide as an indicator of geodynamic processes in the greater Yellowstone region, western North America: *Geosphere*, v. 3, p. 272-281.
- (38) Regalla, C. A., Anastasio, D. J., and Pazzaglia, F. J., **2007**, Characterization of the Monument Hill fault system and implications for the active tectonics of the Red Rock Valley, Southwestern Montana: *Journal of Structural Geology*, 29, 1339-1352.
- (37) Picotti, V. and Pazzaglia, F. J., **2007**, Comment on “Shale diapirism in the Quaternary tectonic evolution of the Northern Apennine, Bologna, Italy by Andrea Borgia et al.: *Journal of Geophysical Research*, 112, B05403, doi:10.1029/2006JB004741.
- (36) Pazzaglia, F. J., J. Selverstone, M. Roy, K. Steffen, S. Newland-Pearce, W. Knipscher, and J. Pearce, **2007**, Geomorphic expression of midcrustal extension in convergent orogens: *Tectonics*, 26, TC6010, doi:10.1029/2006TC001961.
- (35) Frankel, K. L., Pazzaglia, F. J., and Vaughn, J. D., **2007**, Knickpoint evolution in a vertically bedded substrate and upstream-dipping terraces: *Geological Society of America Bulletin*, v. 119, p.476-486.
- (34) Belmont, P. W., Pazzaglia, F. J., and Gosse, J., **2007**, Cosmogenic ¹⁰Be as a tracer for hillslope and channel sediment dynamics in the Clearwater River, western Washington State: *Earth and Planetary Science Letters*, v. 264, p. 123-135.
- (33) Galster, J. C., Pazzaglia, F. J., Hargreaves, B., Morris, D. P., Peters, S. C., and Weissman, R. N., **2006**, The effects of urbanization on watershed hydrology: the scaling of discharge with drainage area: *Geology*, v. 34, p. 713-716.
- (32) Frankel, K. L. and Pazzaglia, F. J., **2006**, Mountain fronts, base level fall, and landscape evolution: Insights from the southern Rocky Mountains, in Willett, S. D., Hovius, N., Brandon, M. T., and Fisher, D. eds., *Tectonics, climate, and landscape evolution: Geological Society of America Special Paper 398*, p. 419-434, doi: 10.1130/2006.2398(26).
- (31) Zaprowski, B., Pazzaglia, F. J., and Evenson, E. B., **2005**, Climatic influences on profile concavity and river incision: *Journal of Geophysical Research – Earth Surface*, v. 110, F03004, doi:10.1029/2004JF000138. **(2, 0)**
- (30) Spagnolo, M. and Pazzaglia, F. J., **2005**, Testing the geological influences on the evolution of river profiles: a case from the northern Apennines, Italy: *Geografia Fisica and Dinamica Quaternaria*, v. 28, p. 103-113.
- (29) Harkins, N. W., Anastasio, D. J., and Pazzaglia, F. J., **2005**, Tectonic geomorphology of the Red Rock fault, insights into segmentation and landscape evolution of a developing range front normal fault: *Journal of Structural geology*, v. 27, p. 1925-1939.
- (28) Frankel, K. and Pazzaglia, F. J., **2005**, Tectonic geomorphology, drainage basin metrics, and active mountain fronts: *Geografia Fisica and Dinamica Quaternaria*, v. 28, p. 7-21.
- (27) Pazzaglia, F. J., **2005**, River responses to Ice Age (Quaternary) climates in New Mexico, in Lucas, S. G., Morgan, G. S., and Zeigler, K. E., eds., *New Mexico’s Ice Ages: New Mexico Museum of Natural History and Science Bulletin No 28.*, p. 115-124.

- (26) Molin, P., Pazzaglia, F. J., and Dramis, F., **2004**, Geomorphic expression of active tectonics in a rapidly deforming forearc, Sila massif, Calabria, southern Italy: *American Journal of Science*, v. 304, p. 559-589. **(1, 0)**
- (25) Etheredge, D., Gutzler, D. S., and Pazzaglia, F. J., **2004**, Geomorphic response to seasonal variations in rainfall in the Southwest United States: *Geological Society of America Bulletin*, v. 116, p. 606-618. **(2, 0)**
- (24) Pearce, S. A., Pazzaglia, F. J., and Eppes, M. C., **2004**, Ephemeral stream response to growing folds: *Geological Society of America Bulletin*, v. 116, p. 1223-1239. **(2, 0)**
- (23) Roy, M., Kelley, S. A., Pazzaglia, F. J., Cather, S., and House, M., **2004**, Middle Tertiary buoyancy modification and its relationship to rock exhumation, cooling, and subsequent extension at the eastern margin of the Colorado Plateau: *Geology*, v. 32, p. 925-928.
- (22) Pazzaglia, F. J. and Hawley, J. W., **2004**, Neogene (rift flank) and Quaternary geology and Geomorphology in, Mack, G. and Giles, K., eds., *The Geology of New Mexico: New Mexico Geological Society Special Publication 11*, Albuquerque, NM, p. 407-437.
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- (1) Pazzaglia, F. J. and Wells, S. G., **1989**, Relative role of tectonism and climatic change on the evolution of Quaternary depositional landforms along a segmented range-front fault, Rio Grande Rift, [abstract]: Geological Society of America, Abstract with Programs v. 21, n. 6, p. 269.

In Press

Submitted

- Gallen, S. F., Pazzaglia, F. J., Wegmann, K. W., Pederson, J. L., and Gardner, T. W., submitted, Transient river incision rates due to dynamic base level and deterministic forcing: *Geology*, 000, 000-000.
- Dempsey, C., Morris, D., Pazzaglia, F. J., Raymond, P., Peters, S and O'Connor, B., **submitted**, The age and lability of organic carbon in headwater catchments with varying land use. *Biogeochemistry*, 000, 000-000.

Graduate Students and Post-Docs

Post-Docs

- (2) Claudio Berti, 2008-2012, Tectonic geomorphology and Remote Sensing InSAR
- (1) Matteo Spagnolo, 2003, River long profile development in the northern Apennines, Italy

Ph.D.

- (10) Helen F. Malenda, (2013-present), Sources, causes, and persistence of active seismicity on a passive margin, an integrated seismic, geomorphic, and geodynamic approach.
- (9) Kellen Gunderson, (2010-2013), Documenting steady or unsteady fold growth along the Apennine mountain front.
- (8) Chris Dempsey (2008 – 2013, with Don Morris), Microbial ecology and DOC metabolism in natural and impacted watersheds.
- (7) Matthew Bennett (2008-2012), Historic watershed hydrology and global change (not completed).
- (6) Ryan McKeon (2008-2012, with Peter Zeitler), Geochronology and thermochronology in the Appalachians.
- (5) Karl Wegman (2008), Active tectonics of the Apennine and Hellenic forearcs.

- (4) Patrick Belmont (with Don Morris), 2007, Landscape evolution and aquatic ecology: long term sediment dynamics and landscape influences in stream ecosystems.
- (3) Josh Galster 2006, The connections between rivers and their watersheds over multiple time scales.
- (2) Brent Zaprowski, 2001, co-advisee with Ed Evenson, Long term landscape evolution of the Black Hills.
- (1) Joel Pederson, 1999 – co-advisee with Dr. Gary Smith, A late Miocene through Quaternary record of buried, relict and modern hillslopes and their deposits.

M.S.

- (18) Rachel Baxter, 2011-12, Sources and transport of suspended sediment in the Saucon Creek watershed.
- (17) William Betterman, 2010 – suspended, InSAR and active tectonics of Crete.
- (16) Kellen Gunderson, 2010, Documenting steady or unsteady fold growth along the Apennine mountain front
- (15) Luke Wilson, 2008 with D. Anastasio, Actively growing folds along the Apennines mountain front.
- (14) Matt Bennett, 2008, Restoration of the Saucon Creek channel
- (13) Sarah Flanagan, 2005, Upland gravels, stream profile modeling, and landscape evolution of the Great Valley, Appalachian Mountains.
- (12) Jeremy Laucks, 2005, Divide mobility and detrial U-Th/He thermochronology in the Appalachian Mountains.
- (11) Matt Wendell, 2005, Geologic map, cross section, and inquiry-based education of Lehigh Gorge State Park.
- (10) Kurt Frankel, 2002, Quantitative topographic differences between erosionally exhumed and tectonically active mountain fronts: implications for late-Cenozoic evolution of the southern Rocky Mountains.
- (9) Thomas Becker, 2001, co-advisee with Peter Zeitler, U-Th/He thermochronology of the Appalachian Mountains.
- (8) Sarah Newland, 2001, Response of ephemeral streams to active tectonics, San Bernardino Mountains, California.
- (7) Justin Pearce, 2001, Fluvial geomorphology of a glacial outwash stream, Matenuska River, Alaska.
- (6) Paul Wisniewski 1999, Fluvial terraces and late Cenozoic landform evolution of the Canadian River.
- (5) David Mitchell 1999, Rates and controls on bedrock fluvial incision.
- (4) Karl Wegmann 1999, Fluvial geomorphology and active tectonics of the Clearwater basin, Olympic Peninsula.
- (3) Daniel Koning 1999, Active tectonics of the Sacramento Mountains.
- (2) Antonio Garcia, 1997, M.S., Active tectonics and glacial geology of the eastern Olympic Peninsula.
- (1) Merri-Lisa Formento-Trigilio, 1997, Tectonics Geomorphology and long-term landscape evolution of Sierra Nacimiento, northern New Mexico.

Curriculum development

- Freshman lecture – Earth’s Environment and Global Change
- Non-major service course – Exploring Earth Lab
- Freshman Gateway – Geology of War
- Sophomore-Junior – Life, climate, and the rock record
- Sophomore-Junior – Surface Processes
- Sophomore-Junior – Earth History, lecture and labs
- Junior – Geological Field Camp
- Junior-Senior – Process Geomorphology
- Junior-Senior – Process Sedimentology
- Junior-Senior – GIS and Computational Techniques in the Earth Sciences
- Junior-Senior – Active Tectonics senior seminar
- Junior-Senior – Lehigh Geology Field Camp
- Graduate – Advanced Fluvial and Tectonic Geomorphology
- Graduate – Graduate Seminar in Geomorphology
- Graduate – Quantitative Fluvial Geomorphology
- Graduate – Dynamic Topography
- Graduate – new core course (with Steve Peters), Physical and chemical processes at the Earth’s surface.
- Graduate – Active Tectonics short course, Bologna, Italy.

Synergistic activities

- Co-convener of the Rocky Mountain mini-symposia at the national meeting of the Geological Society of America Denver meeting.
- Co-convener of several technical sessions and Pardee symposia, Geological Society of America National meetings; co-editor of planned special volume dedicated to understanding of steady-state orogens.
- Co-convener of two national GSA field trip, two regional GSA field trips, and a GSA short course on active tectonics.
- Co-convener of two international field trips: International Geomorphologic Congress, Late Cenozoic geology and geomorphology of the U.S. Atlantic passive margin (1994) and INQUA, Geology and geomorphology of the Susquehanna River basin (2003).
- Co-chair and co-editor of the 50th annual New Mexico Geological Society meeting and field trip (Sept., 1999).
- Development of a mentorship program for Native American students in the Department of Earth and Planetary Sciences, UNM involving students in field mapping and related geologic studies.
- Active participation and personal commitment to Lehigh’s geology field camp dedicated to raising the competence in geologic mapping among Earth science students.
- Core involvement in USGS mapping pursuant to the Middle Rio Grande corridor project.

- Long-standing commitment to understanding of the underlying processes in fluvial terrace genesis - Member of IGPP FLAG group dedicated to global correlation of fluvial terrace sequences on passive margins.
- American Geophysical Union, Geological Society of America, National Association of Geology Teachers, and New Mexico Geological Society
- Development of an educational CDROM – “Earth’s Dynamic Surface”, published by Tasa Graphics Incorporated.
- Chinese-American Frontiers in Science (CAS) invited lecturer, Beckman Center, Irvine California, October, 2000.
- National Park Service Interpreter training, March 15-18, 2006, NPS National Training Center, Harpers Ferry, WV.
- 1st Lehigh Valley Watershed Conference, Mountaintop Campus, October 6th, 2006.
- Field trip coordinator, 2006 Philadelphia GSA meeting.
- Co-convener of GSA Pardee Symposium 1 and First-Annual Kirk Bryan Field Excursion, 2006 Philadelphia Geological Society of America meeting.
- Director (since 2004) of Lehigh Geology Field Camp.
- Earth Science secondary education outreach, High School Earth Science teachers at field camp.
- Co-convener of two technical sessions (tectonic and fluvial geomorphology) at the national GSA meeting, Houston.
- 2nd Lehigh Valley Watershed Conference, Holiday Inn, Fogelsville, March, 2008.
- 3rd Lehigh Valley Watershed Conference, DeSales University, October, 2009.
- Co-convener of a GSA technical session on steady and unsteady process rates in active tectonics.
- Field education of K-12 Earth science educators, Lehigh Field Camp.
- Co-convener of NSF EarthScope-GeoPRISMS funded workshop, Geologic, Tectonic, and Geodynamic Processes of the Eastern North American (ENAM) Passive Margin Workshop
- Co-convener and author of the Marcellus Shale Panels and Report, Lehigh University, 2011-12.
- Co-convener of 2013 NSF EarthScope National Meeting, with field trip, Raleigh, NC.
- Service learning geologic education displays, Saucon Rail Trail, Hellertown-Lower Saucon, PA. http://www.lehigh.edu/~fjp3/srt/srt_geology.html.

Research Collaborators (last 4 years):

Anastasio, D. (Lehigh), Bennett, R. (U. Arizona); Brandon, M. T. (Yale Univeristy); Bruno, P. (Utah); Eppes, M., (UNC-Charlotte); Frankel, K. (GATech); Gosse, J. (Dalhousie); Granger, D. (Purdue); Kodama, K. (Lehigh); Morris D. (Lehigh); Park, J. (Yale); Picotti, V. (Bologna); Reiners, P. (U. Arizona); Willett, S. (ETH); Zeitler, P. (Lehigh).

Service

University Service

University

- ADVANCE Internal Advisory Committee, 2011-present.
- CAS representative to Centers and Programs steering committee, 2005-06.
- Global Lehigh advisory board, 2006-2012.
- Study Abroad Faculty Advisory Board, 2007-present; chair in 2008-2009.

College

- Internationalization of the curriculum committee, Fall, 2005.
- Studies abroad committee, Fall, 2006

Interdisciplinary programs

- Co-Director, Environmental Initiative, 2011-12.
- Environmental Initiative, 2005-current.
- Environmental Initiative Steering Committee, 2007-present

Department

- Field committee, 2005-06
- Chair, search committee, Soil Biogeochemistry, 2006-07
- Chair, search committee, paleoecology, 2001-02.
- Search committee, Remote Sensing, 2004
- Search committee, Plant Ecology, 1999-2000
- Department Seminar, 1999-2002
- Graduate instructional committee, 2002-2004.
- Department Chair, 2007-2013.
- Department Field Trip, Italy, 2009
- Department Field Trip, Utah-California, 2011.
- Computer and Facilities Committee (Chair), 2014-present.

Professional Service

Professional organizations

- Field trip chairman, Geological Society of America, 2006
- Geological Society of America, Quaternary Geology and Geomorphology Panel Member 2007-2010.
- GSA Councilor, 2015-

Commissions, panels

- U.S. Geological Survey EDMAP Panel, 2000-2002
- National Science Foundation, EAR-GEO-Geomorphology and Land Surface Dynamics, 2005-2007.

International activities

- Numerous invited lectures and short courses in Italy.

Other

- Co-organizer, Lehigh Valley Watershed Conference, October, 2006, March, 2008, October, 2009, March, 2011, October, 2012.
- Co-organizer and convener, NSF EarthScope-GeoPRISMS workshops, Bastrop, Texas (May, 2011) and Lehigh University (October, 2011).