CURRICULUM VITAE

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Contents

1 Academic Training

- Stanford University
  Ph.D. Geological and Environmental Sciences, 1995, supervised by Dr. David D. Pollard.
  Dissertation title: "Coupled Tectonic Deformation and Geomorphic Degradation along the San Andreas Fault System."
  National Science Foundation Graduate Fellowship (1989-1993)

- Whittier College
  B.A. (Summa Cum Laude) in Geology and Spanish, 1989, supervised by Dr. Dallas D. Rhodes.
  Senior Thesis: "Geomorphic Responses in Ephemeral Channels to Strike-slip Faulting along the San Andreas Fault, Carrizo Plain, San Luis Obispo County, California."
  Presidential Scholarship at Whittier College (full tuition 1985–1989).

2 Employment

- Arizona State University, School of Earth and Space Exploration
  Deputy Director
  August 15, 2017–Present

- Arizona State University, School of Earth and Space Exploration
  Professor of Geology
  July 1, 2010–Present

- University of Potsdam (Germany), Institut für Erd- und Umweltwissenschaften
  Visiting Professor (sabbatical)
  July 1, 2001–June 30, 2002 and October 1, 2016–July 31, 2017

- Arizona State University, School of Earth and Space Exploration
  Associate Professor of Geology
  July 1, 2006–June 30, 2010

- Arizona State University, Department of Geological Sciences
  Associate Professor of Geology
  July 1, 2001–June 30, 2006

- Arizona State University, Department of Geological Sciences
  Assistant Professor of Geology
  August 1, 1995–June 30, 2001

- Stanford University, Department of Geological and Environmental Sciences
  Post-Doctoral Scholar
  April 1, 1995–July 31, 1995

3 Research interests

Active tectonics, quantitative structural geology and geomorphology; fault zone structure and geomorphology; earthquake surface rupture and paleoseismology; tectonic geomorphology; theoretical studies of faulting and hillslope development; the San Andreas Fault system; active deformation in central Asia; regional geology and stratigraphic context for paleoanthropology in the Afar region of Ethiopia; Gulf of California tectonics and surface processes; integrated investigation of earthquake hazards; high resolution topography derived from LiDAR structure from motion technology; engineering geologic field methods; Geographic Information Systems, Remote Sensing, and Geoinformatics; Cyberinfrastructure; and Quaternary Geology and desert surface processes (esp. in the southwestern US and Mexico).

4 Honors and awards

- Fellow, Geological Society of America (elected 2009)
- Arizona State University School of Earth and Space Exploration Undergraduate Professor of the Year (from students), 2013
- Arizona State University School of Earth and Space Exploration Graduate Professor of the Year (from students), 2008
- Arizona State University School of Earth and Space Exploration Undergraduate Professor of the Year (from students), 2007
- Arizona State University Geological Sciences Department Faculty Appreciation award (from students), 2005
- Arizona State University Geology Department Excellence in Teaching award, 1996 (shared with S. Reynolds)
- Stanford–USGS Fellowship (1993–1994)
- Donath Honors Fellowship, School of Earth Sciences, Stanford University (1992–1993)
- National Science Foundation Graduate Fellowship (1989–1993)
- Whittier College Presidential Scholar (1985-1989)

5 Publications (Work done primarily as ASU student or post-doc author indicated with asterisk)

5.1 Refereed publications

Zawacki*, E., Clarke, A. B., Arrowsmith, J R., Lynch, D., Bonadonna, C., Tecolote volcano, Pinacate volcanic field (Sonora, Mexico): A case of highly explosive basaltic volcanism and shifting eruptive styles, *Journal of Volcanology and Geothermal Research*, in review, 2018.

Braun, D., Aldeias, V., Archer, W., Arrowsmith, J R., Baraki, N., Campisano, C., Deino, A. L., DiMaggio, E. N., Dupont-Nivet, G., Engda, B., Feary, D. A., Garello, D., Kerfelew, Z., McPherron, S., Patterson, D., Reeves, J. S., Thompson, J. C., Reed, K. E., The Oldest Oldowan Artifacts at ¿2.58 Ma from Ledi-Geraru, Ethiopia, Highlight Pliocene Technological Diversity, *Proceedings of the National Academy of Sciences*, in review, 2018.

Marliyani*, G. I., Helmi, H., Arrowsmith, J R., Pramumijoyo, S., Widiyantoro, S., Gunawan, E., Sunarti, E., Ida, R., Uplift of a Fluvial Meander at Kendeng Fold and Thrust Belt (East Java, Indonesia): Evidence of Late Quaternary Thrust Faulting, *Geosphere*, in review, 2018.

Scott*, C. P., Champenois, J., Klinger, Y., Nissen, E., Maruyama, T., Chiba, T., Arrowsmith J R., Coseismic Slip Distribution of the 2016 M7 Kumamoto, Japan, Earthquake derived from a Joint Inversion of Differential Lidar, Optical Correlation, and InSAR Surface Displacements, *Geophysical Research Letters*, in revision, 2018.

Marliyani*, G. I., Arrowsmith J R., Helmi, H., Evidence for Multiple Ground-rupturing Earthquakes in the Past 4000 Years along the Pasuruan Fault, East Java, Indonesia: Documentation of Active Normal Faulting in the Javan Backarc, *Tectonics*, in revision, 2018.

Rhodes, D.D., R.M. Negrini, J.R. Arrowsmith, P.E. Wigand, M.R. Palacios-Fest, O.K. Davis, Geomorphic and sedimentologic evidence for Pluvial Lake Carrizo, San Luis Obisbo County, California, in S. Starrat, others eds., From Saline to Freshwater: The Diversity of Western Lakes in Space and Time, Special Paper, Geological Society of America, Boulder, CO., in revision, 2018.

117) Grant-Ludwig, L., Akciz, S., Arrowsmith, J R., Salisbury, J. B., Reproducibility of San Andreas fault slip rate measurements at Wallace Creek in the Carrizo Plain, CA, *Earth and Space Sciences*, in press, 2018.

116) Lajoie, L. J., Nissen, E., Johnson, K. L., Arrowsmith, J R., Glennie, C. L., Hinojosa-Corona, A., Oskin, M. E., Extent of low-angle normal slip in the 2010 El Mayor-Cucapah (Mexico) earthquake from differential lidar, *Journal of Geophysical Research*, https://doi.org/10.1029/2018JB016828, 2018.

115) Flowers, R. M., Arrowsmith, J R., McConnell, V., Metcalf, J. R., Rittenour, T., and Schoene, B., The AGeS2 (Awards for Geochronology Student research) Program: Supporting community geochronology needs and interdisciplinary science, *GSA Today: Groundworks*, https://doi.org/10.1130/GSATG392GW.1, 2018.

114) Scott*, C. P., Arrowsmith, J. R., Nissen, E., Lajoie, L., Maruyama, T., and Chiba, T., The M7 2016 Kumamoto, Japan, earthquake: 3-D deformation along the fault and within the damage zone constrained from differential lidar topography. *Journal of Geophysical Research: Solid Earth*, 123. https://doi.org/10.1029/2018JB015581, 2018.

113) Korzhenkov, A. M., Arrowsmith, J R., Crosby, C. J., Guralnik, B., Rogozhin, E. A., Sorokin, A. A., and Deev, E. V. Strong Paleoearthquakes along the Aksuu Border Fault according to the Results of Dating the Offset Terrace Complex of the Chon-Aksuu River, Northern Tien Shan. Izvestiya, Physics of the Solid Earth, 54(2), 252-268, 2018.

112) Bohon*, W., Hodges, K. V., Tripathy-Lang, A., Arowsmith J R., Edwards, E., Structural relationship between the Karakoram and Longmu Co Fault systems, southwestern Tibetan Plateau, revealed by ASTER remote sensing, *Geosphere*, 14 (4): 1837-1850. https://doi.org/10.1130/GES01515.1, 2018.

111) Carr*, B. B., Clarke, A. B., Vanderkluysen, L., Arrowsmith, J R., Mechanisms of lava flow emplacement during the effusive eruption of Sinabung Volcano (Sumatra, Indonesia), *Journal of Volcanology and Geothermal Research*, https://doi.org/10.1016/j.jvolgeores.2018.03.002, 2018.

110) Carr*, B. B., Clarke, A. B., Arrowsmith, J R., Vanderkluysen, L., Dhanu, B. Eko, The emplacement of the active lava flow at Sinabung Volcano, Sumatra, Indonesia, documented by structure-from-motion photogrammetry, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2018.02.004, 2018.

109) Salisbury*, J. B., Arrowsmith, J R., Brown, N., Rockwell, T. K., Grant-Ludwig, L., Akciz, S., The age and origin of small offsets at Van Matre Ranch along the San Andreas Fault in the Carrizo Plain, California, *Bulletin of the Seismological Society of America*, doi: 10.1785/0120170162, 2018.

108) Patyniak, M., Landgraf, A., Dzhumabaeva, A., Abdrakhmatov, K. E., Rosenwinkel, S., Korup, O., Preusser, F., Fohlmeister, J., Arrowsmith, J R., Strecker, M., R., Paleoseismic Record of Three Holocene Earthquakes Rupturing the Issyk-Ata Fault near Bishkek, North Kyrgyzstan, *Bulletin of the Seismological Society of America*, 2017.

107) Robinson*, S. E., Bohon*, W., Kleber*, E. J., Arrowsmith, J R., Crosby, C. J., Applications of high-resolution topography in Earth science education, *Geosphere*, v. 13, no. 6, doi:10.1130/GES01236.1, 2017.

106) Field, E. H., Jordan, T. J., Page, M. T., Milner, K. R., Shaw, B. E., Dawson, T. E., Biasi, G. P., Parsons, T., Hardebeck, J. L., Michael, A. J., Weldon II, R. J., Powers, P. M., Johnson, K. M., Zeng, Y., Bird, P., Felzer, K. R., van der Else, N., Madden, C., Arrowsmith, J R., Werner, M. J., Thatcher, W. R., A New Earthquake Forecasting Model for California, *Seismological Research Letters*, Volume 88, Number 5, doi: 10.1785/0220170045, 2017.

105) Campisano, C. J., Cohen, A. S., Arrowsmith, J R., Asrat, A., Behrensmeyer, A. K., Brown, E. T., Deino, A. L., Deocampo, D. M., Feibel, C. S., Kingston, J. D., Lamb, H. F., Lowenstein, T. K., Noren, A., Olago, D., Owen, B., Pelletier, J. D., Potts, R., Reed, K. E., Renaut, R. W., Russell, J. M., Russell, J. L., Schaebitz, F., Stone, J. R., Trauth, M. H., Wynn, J. G., The Hominin Sites and Paleolakes Drilling Project: Acquiring High-Resolution Paleoclimate Records from the East African Rift System and Their Implications for Understanding the Environmental Context of Hominin Evolution, *PaleoAnthropology*: 1-43, 2017.

104) Donnellan, A., Arrowsmith, J R., DeLong, S., Spatio-Temporal Mapping of Plate Boundary Faults in California using Geodetic Imaging, *Geosciences*, 7, 15; doi:10.3390/geosciences7010015, 2017.

103) Ferrater, M., Pallas, R., Echeverria, A., Ortuno, M., Baize, S., Rhodes, E. J., Arrowsmith, J R., Medialdea, A., Martinez-Diaz, J. J., Masana, E., Rockwell, T. K., Perea, H., Garcia-Melendez, E., Sharp., W., D., Slip rate estimation of a slow-moving fault by combining paleoseismological 3D trenching and morphotectonic analysis: the strike-slip Alhama de Murcia fault (SE Iberian Peninsula), *Quaternary International*, http://dx.doi.org/10.1016/j.quaint.2017.02.018, 2017.

102) Gold, R. D., Cowgill, E., Arrowsmith, J R., Friedrich, A. M., Pulsed strain release on the Altyn Tagh fault, northwest China, *Earth and Planetary Science Letters*, v. 459, p. 291-300, doi: 10.1016/j.epsl.2016.11.024, 2017.

101) Marliyani*, G. I., Arrowsmith, J R., and Whipple, K. X., Characterization of slow slip rate faults in humid areas: Cimandiri Fault zone, Indonesia, *Journal of Geophysical Research: Earth Surface*, 121, doi:10.1002/2016JF003846, 2016.

100) Whipple, K. X., Shirzaei, M., Hodges, K. V., Arrowsmith, J R., Active shortening within the Himalayan orogenic wedge implied by 2015 Gorkha earthquake, *Nature Geoscience*, DOI: 10.1038/NGEO2797, 2016.

99) Arrowsmith, J R., Crosby*, C. J., Korjenkov, A. M., Mamyrov, E., Povolotskaya, I., Guralnik, B., Landgraf, A., Surface rupture of the 1911 Kebin (Chon-Kemin) earthquake, Northern Tien Shan, Kyrgyzstan. In: Landgraf, A., Kuebler, S., Hintersberger, E. and Stein, S. (eds) Seismicity, Fault Rupture and Earthquake Hazards in Slowly Deforming Regions. Geological Society, London, Special Publications, 432. http://doi.org/10.1144/SP432.10; 2016.

98) Landgraf, A., Dzhumabaeva, A., Abdrakhmatov, K. E., Strecker, M. R., Macaulay, E. A., Arrowsmith, J R., Sudhous, H., Preusser, F., Rugel., G., Merchel., S., Repeated large-magnitude earthquakes in a tectonically active, low-strain continental interior: the northern Tien Shan, Kyrgyzstan, *Journal of Geophysical Research, Solid Earth*, 121 (5), 3888-3910, doi:10.1002/2015JB012714, 2016.

97) Cohen, A., Campisano, C., Arrowsmith, R., Asrat, A., Behrensmeyer, A.K., Deino, A., Feibel, C., Hill, A., Johnson, R., Kingson, J., Lamb, H., Lowenstein, T., Noren, A., Olago, D., Owen, R.B., Potts, R., Reed, K., Renaut, R., Schbitz, F., Tiercelin, J.-J., Trauth, M.H., Wynn, J., Ivory, S., Brady, K., OGrady, R., Rodysill, J., Githiri, J., Russell, J., Foerster, V., Dommain, R., Rucina, S., Deocampo, D., Russell, J., Billingsley, A., Beck, C., Dorenbeck, G., Dullo, L., Feary, D., Garello, D., Gromig, R., Johnson, T., Junginger, A., Karanja, M., Kimburi, E., Mbuthia, A., McCartney, T., McNulty, E., Muiruri, V., Nambiro, E., Negash, E.W., Njagi, D., Wilson, J.N., Rabideaux, N., Raub, T., Sier, M.J., Smith, P., Urban, J., Warren, M., Yadeta, M., Yost, C., Zinaye, B. , The Hominin Sites and Paleolakes Drilling Project: Inferring the Environmental Context of Human Evolution from Eastern African Rift Lake Deposits, *Scientific Drilling*, 21, 116, www.sci-dril.net/21/1/2016/ doi:10.5194/sd-21-1-2016, 2016.

96) Barton, C., M., Ullah, I., Bergin, S. M., Sarjoughian, H. S., Mayer, G. R., Bernabeau, J. E., Heimsath, A. M., Acevedo, M. F., Riel-Salvatore, J. G., Arrowsmith, J R., Experimental socioecology: integrative science for anthropocene landscape dynamics, *Anthropocene*, Volume 13, p. 3445, http://dx.doi.org/10.1016/j.ancene.2015.12.004, 2016.

95) Ferrater, M., Arrowsmith, J R., Masana, E., Lateral offset quality rating along low slip rate faults: application to Alhama de Murcia fault (SE Iberian Peninsula), *Remote Sensing*, 7, 14827-14852, doi:10.3390/rs71114827, 2015.

94) Ghanat*, S. T., Kavazanjian, E., Arrowsmith, J R., Seismic Source Characterization for Greater Phoenix Area Earthquake Hazard, *Environmental and Engineering Geoscience*, Vol. XXI, No. 3, pp. 211-222, August 2015.

93) Salisbury*, J. B., Haddad*, D. E., Rockwell, T., Arrowsmith, J R., Madugo, C., Zielke, O., Scharer, K., Validation of meter-scale surface faulting offset measurements from high-resolution topographic data, *Geosphere*, v. 11, no. 6, p. 118, doi:10.1130/GES01197.1, 2015.

92) DiMaggio*, E. N., Arrowsmith, J R., Campisano, C. J., Johnson, R., Deino, A. L., Warren, M., Fisseha, S., Cohen, A. S., Tephrostratigraphy and depositional environment of the youngest (¡ 2.94 Ma) Hadar Formation (Afar, Ethiopia), *Journal of African Earth Sciences*, doi:10.1016/j.jafrearsci.2015.09.018, 112, p. 234-250, 2015.

91) Passalacqua, P., Belmont, P., Staley, D. M., Simley, J. D., Arrowsmith, J R., Bode, C. A., Crosby, C., DeLong, S., Glenn, N., Kelly, S. A., Lague, D., Sangireddy, H., Schaffrath,K., Tarboton, D., Wasklewicz, T, Wheaton, J., Analyzing high resolution topography for advancing the understanding of mass and energy transfer through landscapes: A review, *Earth-Science Reviews*, Volume 148, Pages 174-193, doi:10.1016/j.earscirev.2015.05.012, 2015.

90) Donnellan, A., J R. Arrowsmith, and V. Langenheim, Airborne Geophysical Techniques for Mapping and Problem Solving, in Applied Geology in California (book), Association of Engineering Geology, eds. R. Anderson and H. Ferriz, Star Publishing, California, pp 541-566, 2016.

89) Weiss, J. R., B. A. Brooks, J R. Arrowsmith, and G. Vergani, Spatial and temporal distribution of deformation at the front of the Andean orogenic wedge in southern Bolivia, *J. Geophys. Res. Solid Earth*, 120, doi:10.1002/2014JB011763, 2015

88) Wei Zhanyu, Arrowsmith, J R., He, H., Evaluating fluvial terrace riser degradation using LiDAR-derived topography: An example from the northern Tian Shan, China, *Journal of Asian Earth Sciences*, Volume 105, Pages 430-442, 2015.

87) Wei Zhanyu, Arrowsmith, J R., He, H., Gao, W., Accuracy analysis of Terrain Point Cloud Acquired by 'Structure from Motion' using Aerial photos, *Seismology and Geology–peer reviewed publication of Chinese Earthquake Administration* (in Chinese with English abstract), DOI: 10.13140/RG.2.1.2282.3523, 2015.

86) Villmoare, B., Kimbel, W. H., Seyoum, C., Campisano, C. J., DiMaggio*, E. N., Rowan*, J., Braun, D. R., Arrowsmith, J R., and Reed, K. E., Early Homo at 2.8 Ma from Ledi-Geraru, Afar, Ethiopia, *Science*, VOL 347 ISSUE 6228, 10.1126/science.aaa1343, 2015.

85) DiMaggio*, E. N., Campisano, C. J., Rowan*, J., Dupont-Nivet, G., Deino, A. L., Bibi, F., Lewis, M. E., Souron, A., Garello, D., Werdelin, L., Reed, K., E., Arrowsmith, J R., Late Pliocene Fossiliferous Sedimentary Record and the Environmental Context of early Homo from Afar, Ethiopia, *Science*, VOL 347 ISSUE 6228, 10.1126/science.aaa1415, 2015.

84) Zielke, O., Klinger, Y., Arrowsmith, J R., Fault slip and earthquake recurrence along strike-slip faults–contributions of high-resolution geomorphic data [Invited Review], *Tectonophysics*, Volume 638, Pages 43-62, http://dx.doi.org/10.1016/j.tecto.2014.11.004, 2015.

83) Cooper, C.M., Mittelstaedt, E., Currie, C., van Wijk, J., Kellogg, L., Hwang, L., and Arrowsmith, J R., Moving Lithospheric Modeling Forward: Attributes of a community computer code, Groundwork article, *GSA Today: Groundworks*, v. 25, no. 5, doi: 10.1130/GSATG230GW.1, 2015.

82) Nissen*, E., Maruyama, T., Arrowsmith, J R., Elliott, J. R., Krishnan*, A. K., Oskin, M. E., Saripalli, S., Coseismic fault zone deformation revealed with differential lidar: Examples from Japanese Mw7 intraplate earthquakes, *Earth and Planetary Science Letters*, 405, 244256, 2014.

81) Toké*, N. A., Boone, C. G., Arrowsmith, J R., Fault Zone Regulation, Seismic Hazard, and Social Vulnerability in Los Angeles, California: Hazard or Urban Amenity? *Earth's Future*, Volume 2, Issue 9, Pages: 440-457, DOI: 10.1002/2014EF000241, 2014. Highlighted in Nature Geoscience: http://www.nature.com/ngeo/journal/v7/n11/full/ngeo2295.html.

80) Akçiz, S. O., Grant Ludwig, L., Zielke, O., Arrowsmith, J R., Three-Dimensional Investigation of a 5 m Deflected Swale along the San Andreas Fault in the Carrizo Plain, *Bulletin of the Seismological Society of America*, Vol. 104, No. 6, doi:0.1785/0120120172, 2014.

79) Johnson, K., Nissen, E., Saripalli, S., Arrowsmith, J R., McGarey, P., Scharer, K., Williams, P., Blisniuk, K., Rapid mapping of ultra-fine fault zone topography with Structure from Motion, *Geosphere*, v. 10; no. 5; p. 1-18; doi:10.1130/GES01017.1, 2014.

78) Field, E. H., Arrowsmith, J R., Biasi, G. P., Bird, P., Dawson, T. E., Felzer, K. R., Jackson, D. D., Johnson, K. M., Jordan, T. H., Madden, C., Michael, A. J., Milner, K. R., Page, M. T., Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3)–The Time-Independent Model, *Bulletin of the Seismological Society of America*, Vol. 104, No. 3, pp. 1122-1180, doi: 10.1785/0120130164, 2014.

77) Glennie, C., Hinojosa, A., Nissen, E., Kusari, A., Oskin, M., Arrowsmith, J R., Borsa, A., Optimization of Legacy LiDAR Datasets for Measuring Near-Field Earthquake Displacements, *Geophysical Research Letters*, DOI: 10.1002/2014GL059919, 2014.

76) Umhoefer, P. J., Maloney, S., Buchanan, B., Arrowsmith, J R., Martinez-Gutiérrez, G., Kent, G., Driscoll, N., Harding, A., Kaufman, D., Rittenour, T., Late Quaternary faulting history of the Carrizal and related faults, La Paz region, Baja California Sur, Mexico, *Geosphere*, DOI: 10.1130/GES00924.1, v. 10, no. 14, 2014.

75) Madden, C., Haddad*, D. E., Salisbury*, J. B., Zielke, O., Arrowsmith, J R., Weldon, R. J., II, and Colunga, J., Compilation of Slip-in-the-Last-Event Data and Analysis of Last Event, Repeated Slip, and Average Displacement for Recent and Prehistoric Ruptures, Appendix R *in* Field, E.H., Biasi, G.P., Bird, P., Dawson, T.E., Felzer, K.R., Jackson, D.D., Johnson, K.M., Jordan, T.H., Madden, C., Michael, A.J., Milner, K.R., Page, M.T., Parsons, T., Powers, P.M., Shaw, B.E., Thatcher, W.R., Weldon, R.J., II, and Zeng, Y., 2013, Uniform California earthquake rupture forecast, version 3 (UCERF3): The time-independent model: U.S. Geological Survey Open-File Report 2013-1165, 97 p., California Geological Survey Special Report 228, and Southern California Earthquake Center Publication 1792, http://pubs.usgs.gov/of/2013/1165/.

74) Scharer, K. M., Salisbury*, J. B., Arrowsmith, J R., Rockwell, T. K., Southern San Andreas Fault Evaluation field activity: Approaches to measuring small geomorphic offsets and challenges and recommendations for active fault studies, *Seismological Research Letters*, v. 85, no. 1, ppl 68 - 76, 2014.

73) Landgraf, A., Zielke, O., Arrowsmith, J R., Ballato, P., Strecker, M. R., Schildgen, T. F., Friedrich, A., Tabatabaei, S., Differentiating simple and composite tectonic landscapes using numerical fault-slip modeling with an example from the south-central Alborz mountains, Iran, *Journal of Geophysical Research–Earth Surface*, 118, 1-14, doi: 10.1002jgrf.20109, 2013.

72) Bohon*, W., Robinson, S. E., Arrowsmith J R., and Semken, S. C., Implementing an effective social media plan: a retrospective from the EarthScope National Office, EOS Transactions of the American Geophysical Union (article), v. 94, no. 27, p. 237-238, 2013.

71) Krishnan*, A. K., Nissen*, E., Saripalli, S., Arrowsmith, J R., and Hinojosa Corona, A., Change Detection Using Airborne LiDAR: Applications to Earthquakes, in J.P. Desai et al. (Eds.): *Experimental Robotics*, STAR 88, pp. 733-743. DOI: 10.1007978-3-319-00065-7_49 Springer International Publishing Switzerland, 2013.

70) Akçiz, S.O., and Arrowsmith, J R., Field trip guide: New views on the evolution of the San Andreas fault zone in central California and the Carrizo Plain, in Putirka, K., ed., Geologic Excursions from Fresno, California, and the Central Valley: A Tour of California's Iconic Geology: Geological Society of America Field Guide 32, p. 1-12, doi:10.1130/2013.0032(01), 2013.

69) de Michieli Vitturi, M. and Arrowsmith, J R., Two dimensional nonlinear diffusive numerical simulation of geomorphic modifications to cinder cones, *Earth Surface Processes and Landforms*, doi:10.1002esp.3423, 2013.

68) Busch*, M., Arrowsmith J R., Umhoefer, P., Coyan*, J., Kent, G., Driscoll, N., Martínez Gutíerrez, G., Geometry, segmentation, and Quaternary slip behavior of the San Juan de los Planes and Saltito fault zones, Baja California Sur, Mexico: Characterization of rift-margin normal faults, *Geosphere*, v. 9, p. 426-443, first published on April 4, 2013, doi:10.1130/GES00806.1, 2013.

67) Haddad*, D. E., Zielke*, O., Arrowsmith, J R., Purvance, M. D., Haddad, A. M., Landgraf, A., Estimating two-dimensional static stabilities of precariously balanced rocks from unconstrained digital photographs, *GeoSphere*, v. 8; no. 5; p. 1042-1053; doi:10.1130/GES00788.1, 2012.

66) Nissen*, E., Krishnan*, A. K., Arrowsmith, J R., Saripalli, S., Three-dimensional surface displacements and rotations from differencing pre- and post-earthquake Lidar point clouds, *Geophysical Research Letters*, v. 39, L16301, doi:10.1029/2012GL052460, 2012.

65) Lockridge*, J., Fouch, M., Arrowsmith, J R., Linkimer, L., Analysis of Seismic Activity near Theodore Roosevelt Dam, Arizona, During the Occupation of the EarthScope / USArray Transportable Array, *Seismological Research Letters*, Volume 83, Number 6, p. 1014-1022, 2012.

64) Haddad*, D. E., Akçiz, S. O., Arrowsmith, J R., Oldow, J. S., Rhodes, D. D., Zielke, O., Toke*, N. A., Haddad, A., Mauer, J. and Shilpakar, P., Applications of airborne and terrestrial laser scanning to paleoseismology, *GeoSphere* Themed issue on Seeing the True Shape of Earth's Surface: Applications of Airborne and Terrestrial Lidar (Frankel volume), v. 8; no. 4; p. 771-786; doi:10.1130GES00701.1, 2012.

63) Lockridge*, J., Fouch, M., Arrowsmith, J R., Seismicity within Arizona during the deployment of the EarthScope USArray Transportable Array, *Bulletin of the Seismological Society of America*, Vol. 102, No. 4, pp. 1850-1863, doi: 10.17850120110297, 2012.

62) Zielke, O., Arrowsmith, J R., Grant Ludwig, L., Akçiz, S. O., High resolution topography-derived offsets along the 1857 Fort Tejon earthquake rupture trace, San Andreas Fault, *Bulletin of the Seismological Society of America*, doi: 10.17850120110230, vol. 102 no. 3 1135-1154, 2012.

61) Oskin, M., Arrowsmith, J.R., Corona, A.H., Elliott, A.J., Fletcher, J.M., Fielding, E., Gold, P.O., Garcia, J.J.G., Hudnut, K.W., Liu-Zeng, J., Teran, O. J., Complex surface rupture of the El Mayor-Cucapah earthquake imaged with airborne lidar: *Science*, v. 335, p. 702-705, 2012.

60) Zielke, O., and J R. Arrowsmith, LaDiCaoz and LiDARimager -MATLAB GUIs for LiDAR data handling and lateral displacement measurement, *GeoSphere* Special issue on high resolution topography, v. 8, no. 1, p. 206-221, doi:10.1130GES00686.1, 2012.

59) Krishnan, S., Crosby, C., Nandigam, V., Phan, M., Cowart, C., Baru, C., Arrowsmith, J R., OpenTopography: A Services Oriented Architecture for Community Access to LIDAR Topography (peer reviewed), comgeo2011, Publication of: Conference COM.Geo '11 International Conference on Computing for Geospatial Research and Application (http://portal.acm.org/citation.cfm?id=1999327), 2011.

58) Crosby*, C. J., Arrowsmith J R., Nandigam, V., and Baru, C., Online access and processing of LiDAR topography data in Geoinformatics: Cyberinfrastructure for the Solid Earth Sciences, eds. G. R. Keller and C. Baru, Cambridge University Press, 2011.

57) Brooks, B. A., Bevis, M., Whipple, K. X., Arrowsmith, J R., Foster, J., Zapata, T., Kendrick, E., Minaya, E., Echalar, A., Blanco, M., Eullades, P., Sandoval, M., Smalley, R. J., Orogenic-wedge deformation and potential for great earthquakes in the central Andean backarc, *Nature Geoscience*, doi:10.1038/ngeo1143, 2011.

56) Toké*, N. A. Arrowsmith, J R., Rymer, M. J., Landgraf, A., Haddad*, D. E., Busch*, M. M., Coyan*, J., Hannah, A., Late Holocene slip rate of the San Andreas Fault and its accommodation by creep and M6 earthquakes at Parkfield, *Geology*, v. 39, no. 3, p. 243-246, doi: 10.1130/G31498.1, 2011.

55) Busch*, M. M., Arrowsmith, J R., Umhoefer, P. J., Coyan*, J. A., Maloney, S. J., Gutierrez, G. M., Geometry and evolution of rift-margin, normal-fault-bounded basins from gravity and geology, La Paz - Los Cabos region, Baja California Sur, MX, *Lithosphere*, 2011.

54) Gold, R. D., Cowgill, E., Arrowsmith, J R., Chen, X., Sharp, W., Cooper, K., Wang, X., Faulted terrace risers place new constraints on the late Quaternary slip rate for the central Altyn Tagh Fault, northwest Tibet, *Geological Society of America Bulletin*, v. 123, no. 5/6, p. 958-978, doi:10.1130/B30207.1, 2011.

53) Larson, P. H., Dorn, R. I., Douglass, J., Gootee, B. F., Arrowsmith J R., Stewart Mountain terrace: a new Salt River terrace with implications for landscape evolution of the lower Salt River Valley, Arizona, *Journal of the Arizona-Nevada Academy of Science* 42(1): 26-35, 2010.

52) Akçiz, S. O., Grant Ludwig, L., Arrowsmith, J R., and Zielke*, O., Century-long average time intervals between ruptures of the San Andreas Fault in the Carrizo Plain, *Geology*, v. 38; no. 9; p. 787-790; doi: 10.1130G30995.1, 2010.

51) Hilley, G. E., Prentice, C. S., DeLong, S., Blisniuk, K., Arrowsmith, J R., Morphologic dating of fault scarps using airborne laser swath mapping (ALSM) data, *Geophysical Research Letters*, 37, L04301, doi:10.1029/2009GL042044, 2010.

50) Zielke*, O., Arrowsmith, J R., Grant Ludwig, L., Akçiz, S. O., Slip in the 1857 and earlier large earthquakes along the Carrizo Plain, San Andreas Fault, *Science*, DOI: 10.1126/science.1182781, p. 1119–1122, 2010.

49) Grant Ludwig, L., Akçiz, S. O., Noriega, G. R., Zielke*, O., Arrowsmith, J R., Climate-modulated channel incision and rupture history of the San Andreas Fault in the Carrizo Plain, *Science*, DOI: 10.1126/science.1182837, p. 1117–1119, 2010.

48) Tarolli, T., Arrowsmith. J R. and Vivoni, E. R., Understanding earth surface processes from remotely sensed digital terrain models (Editorial), *Geomorphology; special issue on high resolution topography*, doi:10.1016j.geomorph.2009.07.005, 2009.

47) Cowgill, E., Gold, R. D., Xuanhua, C., Xiao-Feng, W., Arrowsmith, J R., Southon, J., Low Quaternary slip rate reconciles geodetic and geologic rates along the Altyn Tagh Fault, NW Tibet, *Geology*, v. 37, no. 7; p. 647-650; doi: 10.1130/G25623A.1; 2009.

46) Prentice, C. S., Crosby, C. J., Whitehill, C. S., Arrowsmith, J R., Furlong, K. P., Phillips, D. A., GeoEarthScope LiDAR illuminates northern California's active faults, *EOS Transactions of the American Geophysical Union*, v. 90, no. 7, p. 55, 2009.

45) Gold, R. D., Cowgill, E., Arrowsmith, J R., Gosse, J., Xuanhua, C., Xiao-Feng, W., Riser diachroneity, lateral erosion, and uncertainty in rates of strike-slip faulting: A case study from Tuzidun along the Altyn Tagh Fault, NW China, *Journal of Geophysical Research*, 114, B4, doi:10.10292008JB005913, 2009.

44) Arrowsmith, J R., and Zielke*, O., Tectonic geomorphology of the San Andreas Fault zone from high resolution topography: an example from the Cholame segment, *Geomorphology; special issue on high resolution topography*, doi:10.1016/j.geomorph.2009.01.002, 2009.

43) Akçiz, S. O., Grant, L. B., Arrowsmith J R., An average recurrence interval of 144 years for repeated rupture of the San Andreas Fault in the Carrizo Plain, California, since 1280 AD, *Journal of Geophysical Research*, 114, B01313, doi:10.1029/2007JB005285, 2009.

42) El-Ashmawy*, L., N.A. Toké*, and J R. Arrowsmith, Geologic Investigations of Urban Sedimentation in Tempe, AZ using retention structures. 2009 Arizona Hydrological Society Symposium Proceedings, 10 pp.

41) Zielke*, O., and J R. Arrowsmith, Depth variation of coseismic stress drop explains bimodal earthquake magnitude-frequency distribution, *Geophysical Research Letters*, *35*, L24301, doi:10.1029/2008GL036249, 2008.

40) Hilley, G. E., and Arrowsmith J R., Geomorphic response to uplift along the Dragon's Back pressure ridge, Carrizo Plain, California, *Geology*, v. 36; no. 5; p. 367-370; doi: 10.1130/G24517A.1, 2008.

39) Roach*, W. J., Heffernan*, J., Grimm, N. B., Arrowsmith, J R., Eisinger*, C., and Rychener*, T., Unintended consequences of urbanization for aquatic ecosystems: a case study from the Arizona desert, *BioScience*, v. 58, no. 8, 715-727, doi:10.1641/B580808, 2008.

38) Dupont-Nivet, G., Sier, M., Campisano, C. J., Arrowsmith, R., DiMaggio*, E., Reed, K., Lockwood, C., Franke, C., Hüsing, S., Magnetostratigraphy of the hominin-bearing Hadar Formation (Ledi-Geraru, Ethiopia), and regional evidence for environmental change ca. 3.2 Ma, *in* Quade, J., and Wynn, J.G., eds., The Geology of Early Humans in the Horn of Africa: Geological Society of America Special Paper 446, p. 67-85, doi: 10.1130/2008.2446(03), 2008.

37) DiMaggio*, E., Campisano, C., Arrowsmith, R., Reed, K., Swisher III, C., Lockwood, C., Correlation and stratigraphy of the BKT-2 volcanic complex in west-central Afar, Ethiopia, *in* Quade, J., and Wynn, J.G., eds., The Geology of Early Humans in the Horn of Africa: Geological Society of America Special Paper 446, p. 163-177, doi: 10.1130/2008.2446(07), 2008.

36) Roman, D., Campisano, C, Quade, J., DiMaggio*, E., Arrowsmith, R., Feibel, C., Composite Tephrostratigraphy of the Dikika, Gona, Hadar, and Ledi-Geraru Project Areas, Northern Awash, Ethiopia, *in* Quade, J., and Wynn, J.G., eds., The Geology of Early Humans in the Horn of Africa: Geological Society of America Special Paper 446, p. 119-134, doi: 10.1130/2008.2446(05), 2008.

35) Korjenkov, A. M., Arrowsmith, J R., Crosby*, C., Mamyrov, E., Orlova, L. A., Povolotskaya, I. E., Tabaldiev, K., Direct seismogenic destruction of the Kamenka medieval fortress, northern Issyk-Kul region, Tien Shan, *Journal of Seismology*, Special Issue on Archeoseismology, DOI 10.1007s10950-006-9029-8, 2006.

34) Harris, R. A., Arrowsmith, J R., Introduction to the Special Issue on the 2004 Parkfield Earthquake and the Parkfield Earthquake Prediction Experiment, *Bulletin of the Seismological Society of America, Special Issue on the 2004 Parkfield Earthquake and Parkfield Experiment*,Vol. 96, No. 4B, pp. S1-S10, September 2006, doi: 10.17850120050831.

33) Toké*, N. A., Arrowsmith, J R., Reassessment of a slip budget along the Parkfield segment of the San Andreas Fault, *Bulletin of the Seismological Society of America, Special Issue on the 2004 Parkfield Earthquake and Parkfield Experiment*, Vol. 96, No. 4B, pp. S339-S348, September 2006, doi: 10.17850120050829.

32) Toké*, N. A., Arrowsmith, J R., Young, J. J., and Crosby*, C., Paleoseismic and postseismic observations of surface slip along the Parkfield segment of the San Andreas Fault, *Bulletin of the Seismological Society of America, Special Issue on the 2004 Parkfield Earthquake and Parkfield Experiment*, Vol. 96, No. 4B, pp. S221-S238, September 2006, doi: 10.17850120050809.

31) Rymer, M. J., Tinsley III, J. C., Treiman, J. A., Arrowsmith, J R., Clahan, K. B., Rosinksi, A. M., Bryant, W. A., Snyder, H. A., Fuis, G. S., Toké8, N. A., and Bawden, G. W., Surface Fault Slip Associated with the 2004 Parkfield, California, Earthquake, *Bulletin of the Seismological Society of America, Special Issue on the 2004 Parkfield Earthquake and Parkfield Experiment*, Vol. 96, No. 4B, pp. S11-S27, September 2006, doi: 10.17850120050830.

30) Thiede, R. C., Arrowsmith, J R., Bookhagen, B., McWilliams, M., Sobel, E. R., Strecker, M. R. Dome formation and extension in the Tethyan Himalaya, Leo Pargil, northwest India, *Geological Society of America Bulletin*, *118*: 635–650, 2006.

29) Jaeger-Frank, E., Crosby*, C. J., Memon, A. Nandigam, V., Arrowsmith, J R., Conner*, J., Altintas, I., Baru, B., A Three Tier Architecture for LiDAR Interpolation and Analysis, *Lecture Notes in Computer Science*, *3993*, Pages 920–927, DOI 10.1007/11758532_123, URL http://dx.doi.org/10.1007/11758532_123, 2006.

28) Noriega, G. R., Arrowsmith, J R., Grant, L. B., and Young*, J. J., Stream Channel Offset and Late Holocene Slip Rate of the San Andreas Fault at the Van Matre Ranch Site, Carrizo Plain, California, *Bulletin of the Seismological Society of America*, *96*, 33–47, 2006.

27) Arrowsmith, J R., Active tectonics, tectonic geomorphology, and fault system dynamics: how geoinformatics can help, *in* Sinha, A. K., ed., Geoinformatics: Data to Knowledge: Geological Society of America Special Paper 397, p. 131–139, doi: 10.1130/2006.2397(09), 2006.

26) Yoburn*, J. B., Fouch, M. J., Arrowsmith, J R., Keller, G. R., A new GIS-driven geophysical database for the southwestern United States, *in* Sinha, A. K., ed., Geoinformatics: Data to Knowledge: Geological Society of America Special Paper 397, p. 249–267, doi: 10.1130/2006.2397(20), 2006.

25) Thiede, R. C., Arrowsmith, J R., Bookhagen, B., McWilliams, M. O., Sobel, E. R., Strecker, M. R., From tectonically to "erosionally" controlled development of the Himalayan orogen, *Geology*, *33*, p. 689-692, doi: 10.1130G21483.1, 2005.

24) Amoroso*, L., Pearthree, P. A., Arrowsmith, J R., Paleoseismology and neotectonics of the Shivwits section of the Hurricane Fault, Northwestern Arizona, *Bulletin of Seismological Society of America*, *95*, No. 5, p. 1919–1942, 2004.

23) Grimm, N. B., Arrowsmith, J R., Eisinger*, C., Heffernan*, J., MacLeod*, A., Lewis, D. B., Prashad*, L., Rychener*, T., Roach*, W. J., Sheibley, R. W., Effects of Urbanization on Nutrient Biogeochemistry of Aridland Streams, *in* DeFries, R. S., Asner, G. S., and Houghton, R. A., eds., *Ecosystems and Land Use Change*, p. 129–146, 2004.

22) Cowgill, E., Yin, A., Arrowsmith J R., Xiaofeng, W., Zhang, S., The Akato Tagh bend along the Altyn Tagh fault, NW Tibet 1. Cenozoic structure, smoothing by vertical-axis rotation, and the effect of topographic stresses on borderland faulting, *Geological Society of America Bulletin*, *116*, p. 1423–1442, 2004.

21) Cowgill, E. Arrowsmith, J R., Yin, A., Xiaofeng, W., Zhengle, C., The Akato Tagh bend along the Altyn Tagh fault, NW Tibet 2. Active deformation and the importance of transpression and strain-hardening along the Altyn Tagh system, *Geological Society of America Bulletin*, *116*, p. 1443–1464, 2004.

20) Thiede, R. C., Bookhagen, B., Arrowsmith, J R., Sobel, E. R., and Strecker, M. R., Climatic control on areas of rapid exhumation along the Southern Himalayan Front, *Earth and Planetary Science Letters*, *222/3-4*, 791-806, 2004. (This paper was recognized as *the most cited paper 2004-2007 in Earth and Planetary Science Letters).*

19) Washburn*, Z., Arrowsmith, J R., Dupont-Nivet, G., Feng, W. X., Qiao, Z. Y., Zhengle, C., Paleoseismology of the Xorxol segment of the Central Altyn Tagh Fault, Xinjiang, China, *Annals of Geophysics*, *5*, 1015-1034, 2003.

18) Strecker, M. R., Hilley*, G. E., Arrowsmith, J R., Coutand, I., Differential structural and geomorphic mountain-front evolution in an active continental collision zone: the NW Pamir, southern Kyrgyzstan, *Geological Society of America Bulletin*, *115*, 166-181, 2003.

17) Runnerstrom, E. E., Grant, L. B., Arrowsmith, J R., Rhodes, D. D., and Stone*, E. M., Displacement across the Cholame segment of the San Andreas Fault between 1855 and 1896 from cadastral surveys, *Bulletin of the Seismological Society of America: Special Issue on Paleoseismology of the San Andreas fault*, *92*, 2,659–2,669, 2002.

16) Young*, J. J., Arrowsmith, J R., Colini, L., Grant, L. B., and Gootee*, B., 3-D excavation and measurement of recent rupture history along the Cholame segment of the San Andreas Fault, *Bulletin of the Seismological Society of America: Special Issue on Paleoseismology of the San Andreas fault*, *92*, 2,670–2,688, 2002.

15) Coutand, I., Strecker, M.R., Arrowsmith, J R., Hilley*, G., Thiede, R.C., Korjenkov, A., and Omuraliev, M., Late Cenozoic development of the intramontane Alai Valley (Pamir-Tien Shan region, Central Asia): an example for intracontinental deformation related to the Indo-Eurasia collision, *Tectonics*, *21*, no. 6, 3-1–3-19, doi:10.1029/2002TC001358, 2002.

14) Stone*, E.M., Grant, L., and Arrowsmith, J R., Recent rupture history of the San Andreas Fault southeast of Cholame in the northern Carrizo Plain, California, *Bulletin of the Seismological Society of America*, *92*, 983–997, 2002.

13) Ramsey, M.S., and J R. Arrowsmith, New Images of Fire Scars May Help to Mitigate Future Natural Hazards, *EOS, Trans. Amer. Geophys. Union*, *82*:36, pp. 393-398, 4 Sept. 2001.

12) Washburn*, Z., Arrowsmith, J R., Forman, S. L., Cowgill, E., Wang, X. F., Zhang, Y. Q., and Chen, Z. L., Recent earthquake geology of the central Altyn Tagh Fault, China, *Geology*, *29*, No. 11, p. 1051-1054, 2001.

11) Hilley*, G. E., Arrowsmith, J R., Amoroso*, L., The role of the interaction of normal faults and fractures on scarp morphology, *Geophysical Research Letters*, *28*, p. 3,777–3,780, 2001.

10) Hilley*, G. E., Arrowsmith, J R., and Stone*, E. M., Using microseismicity and surface offset data to define fault segment boundaries along low friction faults, with an example from the Cholame-Carrizo segment boundary along the San Andreas Fault, Southern California, *Bulletin of the Seismological Society of America*, *91*, 427–440, 2001.

9) Arrowsmith, R., Bürgmann, R., and Dumitru, T., Uplift and fault slip rates in the southern San Francisco Bay area from fission-tracks, geomorphology, and geodesy, in *Quaternary Geochronology: Methods and Applications*, Noller, J. S., Sowers, J. M., and Lettis, W. R., (Eds.), *American Geophysical Union Reference Shelf*, *4*, 503–508, 2000.

8) Arrowsmith, J R., and Strecker, M. R., Seismotectonic range-front segmentation and mountain-belt growth in the Pamir-Alai region, Kyrgyzstan (India-Eurasia collision zone), *Geological Society of America Bulletin*, *111*, 11, 1,665–1,683, 1999.

7) Arrowsmith, J R., Rhodes, D. D., and Pollard, D. D., Morphologic dating of scarps formed by repeated slip events along the San Andreas Fault, Carrizo Plain, California, *Journal of Geophysical Research*, *103*, B5, 10,141–10,160, 1998.

6) Arrowsmith, J R., McNally, K., and Davis, J., Potential for earthquake rupture and M 7 earthquakes along the Parkfield, Cholame, and Carrizo segments of the San Andreas Fault, *Seismological Research Letters*, *68*, 6, 902–916, 1997.

5) Boschi, E., Giardini, D., Pantosti, D., Valensise, G., Arrowsmith, R., Basham, P., Bürgmann, R., Crone, A., Hull, A., McGuire, R., Schwartz, D., Sieh, K., Ward, S., and Yeats, R., New trends in active faulting studies for seismic hazard assessment, *Annali di Geofisica*, *39*, 1,301–1,307, 1996.

4) Arrowsmith, J R., Pollard, D. D., and Rhodes, D. D., Hillslope development in areas of active tectonics, *Journal of Geophysical Research*, *101*, B3, 6,255–6,275, 1996. Correction: *Journal of Geophysical Research*, *104*, B1, 805, 1999.

3) Crider, J. G., Cooke, M. L., Willemse, E. J. M., and Arrowsmith, J R., Basic mechanics of jointing and faulting through interactive linear-elastic crack models, in *Microcomputers in Structural Geology*, De Paor, D. (Ed.), Pergamon Press, New York, 359–388, 1996.

2) Arrowsmith, J R. and Rhodes, D. D., Original forms and initial modifications of the Galway Lake Road scarp formed along the Emerson Fault during the 28 June 1992 Landers, California, earthquake, *Bulletin of the Seismological Society of America*, *84*, 511–527, 1994.

1) Bürgmann, R., Arrowsmith, R., Dumitru, T. A., and McLaughlin, R. J., Rise and fall of the southern Santa Cruz Mountains, California, from fission tracks, geomorphology, and geodesy, *Journal of Geophysical Research*, *99*, 20,181–20,202, 1994.

5.2 Data Publications

Scott*, C.P., Scott*, T., Lao-Davila, D.A., Clarke, A.B., Arrowsmith, J R., and Lynch, D. (2018): Photogrammetric model of the Tecolote Volcano, Pinacate Volcanic Field, Sonora, Mexico (point cloud [563M points], orthophoto [4 cm/pix], and DEM [8 cm/pix]). Distributed by OpenTopography. Accessed May 30, 2018. https://doi.org/10.5069/G9028PFR

Arrowsmith, J R., DiMaggio, E. N., Garello*, G. I., Villmoare, B. and Ledi Geraru Research Project (2018): Photogrammetric model of a portion of the Lee Adoyta Basin, Afar, Ethiopia (point cloud [122M points], orthophoto [2 cm/pix], and DEM [25 cm/pix]). Distributed by OpenTopography. Accessed October 23, 2018. https://doi.org/10.5069/G95X271W

Arrowsmith, J R., Pisciotta, F. and CERG-C (2018): Photogrammetric model of a portion of the Faraglione–a rock outcropping in the Vulcano Town area, Vulcano Island, Sicily, Italy (point cloud [17M points] and DEM [6 cm/pix]). Distributed by OpenTopography. Accessed October 29, 2018. https://doi.org/10.5069/G9WD3XPD

5.3 Additional scientific contributions

Scientific blogging (one to a few per month): `http://activetectonics.blogspot.com/`

Bruce Douglas, Nicholas Pinter, Nathan Niemi, J Ramon Arrowsmith, Kate Shervais, and Chris Crosby, "Unit 3: Geodetic survey of a fault scarp has been accepted into the On the Cutting Edge Exemplary Teaching Activity collection (top 20% of all content based on peer review for teaching value). `https://serc.carleton.edu/getsi/teaching_materials/high-rez-topo/unit3.html`

Kate Shervais, J Ramon Arrowsmith, Nathan Niemi, Marin Clark, and Chris Crosby, "Unit 4: Geomorphic change detection has been accepted into the On the Cutting Edge Exemplary Teaching Activity collection (top 20% of all content based on peer review for teaching value). `https://serc.carleton.edu/getsi/teaching_materials/high-rez-topo/unit4.html`

Arrowsmith, J R., and Landgraf, A., Matlab script for probabilistic incision model in geological long-term evolution, Aktennotiz AN 18-555 (publicly available document), Nationale Genossenschaft für die Lagerung radioaktiver Abfälle (Switzerland), 2018.

Arrowsmith, J R., Remembering the Great 1906 San Francisco Earthquake. Blog post April 30, 2018 at the AGU leadership blog From the Prow `https://fromtheprow.agu.org/remembering-the-great-1906-san-francisco-earthquake/`.

Viswanath Nandigam, Christopher Crosby, Ramon Arrowsmith, Minh Phan, Kai Lin, and Benjamin Gross. 2017. Advancing analysis of high resolution topography using distributed HPC resources in OpenTopography. In Proceedings of PEARC17, New Orleans, TX, USA, July 09-13, 2017, 3 pages. DOI: http://dx.doi.org/10.1145/3093338.3093345

Haddad, D. E., and Arrowsmith, J R., 2015. Balanced Rocks. In Encyclopedia of Planetary Landforms (Vol. 1, pp. 109-114). H. Hargitai and G. Kereszturi. (Eds.). New York, NY: Springer Science and Business Media. DOI 10.1007/978-1-4614-3134-3.

Abers, G., Schwartz, S. Y., Arrowsmith, J R., Evans, R., Freymueller, J., Gaherty, J. Gao, H., Lizarralde, D., Roland, E., Toomey, D. van Keken, P., Wiens, D., and Woodward, Amphibious Array Facilities Workshop Report, 2015.

Arrowsmith, J R., High resolution topography and active faulting, 2014. In Vol. 5: Proceedings of the 5th International INQUA Meeting on Paleoseismology, Active Tectonics and Archeoseismology (PATA), 21-27 September 2014, Busan, Korea (Grutzner, C., Choi, J-H., Edwards, P., and Kim, Y-S., eds.). ISBN 97911953441 09 93450. Published by the Geological Society of Korea and the Korean Institute of Geoscience and Mineral Resources.

Rowan, L. and Arrowsmith J R., EarthScope, a Grand Earth-Observing Project with an Epic Future. Blog post May 27, 2014 at the AGU Science Policy site the Bridge `http://thebridge.agu.org/2014/05/27/earthscope-grand-earth-observing-project-epic-future/`.

Haddad, D. E., and Arrowsmith, J R., 2014. Balanced Rocks. In Encyclopedia of Planetary Landforms. A. Kereszturi and H. Hargitai (Eds.). New York, NY: Springer Science and Business Media. DOI: 10.1007978-1-4614-9213-9_467-1.

Haddad, D. E., Nissen, E., Arrowsmith, J R., High-resolution lidar digital topography in active tectonics research, in Remote Sensing for Geoscientists: Integration and Analysis (published by Taylor and Francis, CRC Press), edited by Gary L. Prost, 2013.

Arrowsmith, J R., Okumura, K., Nissen, E., Crosby, C., Maruyama, T., Oskin, M. E., Toda, S., Workshop report on high resolution topography applied to earthquake studies (Earthquake Research Institute, Tokyo, Sept. 18-20, 2013) http://www.opentopography.org/index.php/resources/VISES_JPN13. Virtual Institute for the Study of Earthquake Systems.

Gurnis, M., Flesch, L., Okaya, D., Peters., S., Walker, D., Ahern, T., Boler, F., Arrowsmith J R. (EarthScope Cyberinfrastructure Subcommittee), A Preliminary Strategic Plan for EarthScope Cyberinfrastructure, May 2012.

Pazzaglia, F. J., Shillington, D., Flemings, P., Tikoff, B., J. Morgan, Arrowsmith, J R., Eastern North America Margin (ENAM) Opportunities Mini-Workshop Report, GeoPrisms-EarthScope joint workshop, 2011.

Oskin, M. E., Arrowsmith, J R., Flemings, R., van Wijk, J., Shillington, D., Rift Initiation and Evolution (RIE), Implementation Workshop Report, Santa Fe, New Mexico, November 4-6, 2010, GeoPRISMS Newsletter No. 26, Spring 2011; http://www.geoprisms.org/images/stories/documents/newsletters/issue26.pdf

Calais, E., Schwartz, S., Arrowsmith, J R., Advances and applications for geodesy: 2010 UNAVCO Science Workshop report, EOS, Transactions, American Geophysical Union, v. 91, no. 29, p. 256, 2010.

Toke, N.A. and JR. Arrowsmith, 2009, Paleoseismic characterization of earthquakes and a geologic slip rate at Parkfield, U.S.Geological Survey National Earthquake Hazard Reduction Program Technical Report, 31pp. `http://earthquake.usgs.gov/research/external/reports/07HQGR0094.pdf`

Meeting Summary: Rupturing Continental Lithosphere: Integration, Synthesis, and Forward vision, 2009, Erin Beutel, Cindy Ebinger, Joann Stock, Mark Behn, Ramon Arrowsmith and MARGINS Office (`http://www.nsf-margins.org/Planning_and_review/Vision_Statements/RCL_vision_statement.pdf`).

Merritts, D.M., Hilley, G. E., Arrowsmith, J R., Carter, B., Dietrich, W., Jacobs, J., Martel, S., Roering, J., Shrestha, R., Snyder, N., 2009, Workshop on studying earth surface processes with high-resolution topographic data, Workshop report to National Science Foundation.

Cohen, A., Arrowsmith, J R., Behrensmeyer, A. K., Campisano, C., Feibel, C., Fisseha, S., Johnson, R., Bedaso, Z. K., Lockwood, C. A., Olago, D., Potts, R., Reed, K., Renaut, R., Tiercelin, J. J., Umer, M., 2009, Scientific Drilling for Human Origins: Exploring the Application of Drill Core Records to Understanding Hominin Evolution. Supplemental Material for Workshop Report, EOS Transactions of the American Geophysical Union.

Andrew Cohen, Ramon Arrowsmith, Anna K. Behrensmeyer, Christopher Campisano, Craig Feibel, Shimeles Fisseha, Roy Johnson, Zelalem Kubsa Bedaso, Charles Lockwood, Emma Mbua, Daniel Olago, Richard Potts, Kaye Reed, Robin Renaut, Jean-Jacques Tiercelin, and Mohammed Umer, 2009, Workshop report: Understanding Paleoclimate and Human Evolution Through the Hominin Sites and Paleolakes Drilling Project, *Scientific Drilling*, no. 8, p. 60–65, doi:10.2204/iodp.sd.8.10.2009.

Crosby, C. J., and Arrowsmith, J R., Evaluation and Application of LiDAR data to constraining a late Pleistocene slip rate and vertical deformation of the Northern San Andreas Fault, Fort Ross to Men-

docino, California: Collaborative research between Arizona State University and the U.S. Geological Survey, USGS National Earthquake Hazards Reduction Program, Final Technical Report 06HQGR0032 (http://earthquake.usgs.gov/research/external/reports/06HQGR0032.pdf).

A. M. Korjenkov, E. Mamyrov, L. A. Orlova, I. E. Povolotskaya, K. Tabaldiev, R. Arrowsmith, On cause of destruction of the Kamenka medieval fortress, northern Issyk-Kul lake region, Kyrgyzstan (In Russian). *III-rd International Symposium Geodynamics and Geoecology of High-Mountain Regions in XXI-st century. Bishkek*, 30 Oct. - 6 Nov. 2005. Abstracts. p. 199-200.

Arrowsmith, J R., Keller, G. R.,, Conner, J., Yoburn, J., Prashad, L., Eisinger, C., Stefanov, W. L., Fouch, M. J., 2004, GEON: ArcIMS online mapping to facilitate integration of geoscience data, ESRI User's Conference publication and presentation.

Hilley, G. E. and Arrowsmith, J R., 2003, Scarp Dater software: Scarp diffusion exercise from the International Quality Network Workshop, Potsdam University, Potsdam, Germany.

Inclusion of photograph in textbook: Figure 5.10 from Keller and Pinter, *Exercises in Active Tectonics*: Terraces of the Minjar River Kyrgyzstan, looking to the south.

Arrowsmith, J R. and Strecker, M. R., Pamir Mountains, Kyrgyzstan, *Tectonics and Topography Slide Collection*, presented at 2001 Geological Society of America Short-course: Tectonics and Topography: Crustal Deformation, Surficial Processes, and Landforms Cosponsored by GSA Structural Geology and Tectonics Division and taught by Dorothy Merritts and Roland Bürgmann.

Arrowsmith, J R. and Washburn, Z., Xinjiang, China, *Tectonics and Topography Slide Collection*, presented at 2001 Geological Society of America Short-course: Tectonics and Topography: Crustal Deformation, Surficial Processes, and Landforms Cosponsored by GSA Structural Geology and Tectonics Division and taught by Dorothy Merritts and Roland Bürgmann.

Amoroso, L., Pearthree, P. A., Arrowsmith, J R., *Paleoseismology and neotectonics of the Shivwitz section of the Hurricane fault, Mohave County, Northwestern Arizona*, Arizona Geological Survey Open-File Report 02-05, 94 pp., 2002.

Chen, Z., Zhang, Y., Chen, X., Wang, X., Arrowsmith, R., Washburn, Z., Late Cenozoic sedimentary process and its response to the slip history of the central Altyn Tagh fault, NW China, *Science in China, series D*, *44*, 103–111, 2001.

Chen, Z., Zhang, Y., Wang, X., Chen, X., Washburn, Z., Arrowsmith, J. R., Fission track dating of apatite constrains on the Cenozoic uplift of the Altyn Tagh Mountain, *Acta Geoscientia Sinica*, *22*, no. 5, 413–415, 2001.

Hilley, G. E., and Arrowsmith, J R., *Penck1d: Transport- and production-limited fault scarp simulation software*, user's manual for software used at 2001 Geological Society of America Short-course: Tectonics and Topography: Crustal Deformation, Surficial Processes, and Landforms Cosponsored by GSA Structural Geology and Tectonics Division and taught by Dorothy Merritts and Roland Bürgmann.

Arrowsmith, J R., *Field trip guide: Urbanization, landscape, and geologic history along the Salt River, eastern Maricopa County, AZ*, presented to International Association of Landscape Ecology field trip of April 27, 2001 and Arizona Hydrological Society August 4, 2001.
`http://activetectonics.la.asu.edu/qgeo/ahsft.pdf`

Zhang, Y., Chen, Z., Washburn, Z., Wang, X., and Arrowsmith J R., Cenozoic displacement history of the Altyn Tagh fault: geological evidence from field observations in Souerkuli and Mangar regions, NW China, *Earth Science Frontiers (China University of Geosciences, Beijing)*, *7*, 210–211, 2000.

Chen, Z., Zhang, Y., Chen, X., Wang, X., Washburn, Z., and Arrowsmith, J R., Sedimentary response of the Cenozoic basin and its response to the slip-history of the Altyn Tagh fault, NW China, *Earth Science Frontiers (China University of Geosciences, Beijing)*, *7*, 245–246, 2000.

Arrowsmith, J R., and Péwé, T. L., Geological overview of the McDowell Mountains, *Proceedings of the McDowell Mountain Archeological Symposium*, 1999.

Strecker, M. R., Arrowsmith, R., and Blisniuk, P. R., Der Pamir: Junge Krustenbewegungen in einer Kollisionzone, *Geographie und Schule*, *119*, 11–16, 1999.

Arrowsmith, J R., Stop 5–Three quick stops along the San Andreas Fault northwest of Highway 166, in *Fault Control on Hydrocarbon Migration in the Monterey Formation, CA, Proceedings of the Stanford Rock Fracture Project*, Dholakia, S., Lore, J., and Brankman, C., (Eds.), 5–1 – 5–7, 1996.

Roering, J. J., Arrowsmith, J R., and Pollard, D. D., Characterizing the deformation and seismic hazard of a blind thrust fault near Stanford, California: coseismic elastic modeling, in *Towards Assessing the Seismic*

Risk Associated with Blind Faults, San Francisco Bay Region, California, Jayko, A., and Lewis, S. D., (Eds.), USGS Open File Report, 96-0267, 41–44, 1995.

Arrowsmith, R., A model for geomorphic displacements applied to hillslope development in areas of active tectonics, in *Proceedings of the Workshop on Paleoseismology*, Prentice, C. S., Schwartz, D. P., and Yeats, R. S., (Eds.), USGS Open File Report, 94-0568, 11–13, 1994.

Bürgmann, R., Arrowsmith, R., and Dumitru, T., Slip rates and earthquake hazard along the Foothills thrust belt in the southern San Francisco Bay area, in *Proceedings of the Workshop on Paleoseismology*, Prentice, C. S., and Schwartz, D. P., and Yeats, R. S., (Eds.), USGS Open File Report, 94-0568, 31–33, 1994.

Arrowsmith, R., Geomorphic Responses in Ephemeral Channels to Strike-slip Faulting along the San Andreas Fault, Carrizo Plain, San Luis Obispo County, California, Undergraduate senior thesis, Whittier College, Whittier, California, 67 pp., 1989.

5.4 Abstracts with student coauthors–since 2014

Arrowsmith, J R., Crosby, C. J., Nandigam, V., OpenTopography: Advancing access to high resolution topography, GSA Annual Meeting, Paper No. 50-10, 2018.

DiMaggio, E. N., Sarkawi, G., Furman, T., Garello, D., Campisano, C. J., Arrowsmith, J R., Wynn, J. G., Quade, J., Feibel, C. S., Application of LA-ICP-MS to tephra correlation studies in Afar, Ethiopia, GSA Annual Meeting, Paper No. 184-21, 2018.

Arrowsmith, J R., Crosby, C. J., Scott, C. P., Scott, T., Lao-Davila, D. A., and DiMaggio, E. N., From crashing kites and frankenmodels to efficient large-scale UAV acquisitions and beautiful shared 3D models, GSA Annual Meeting, Paper No. 226-11, 2018.

Wade, A., Arrowsmith, J Rl., Donnellan, A., Vernon, F. L., Ben-Zion, Y., Dekameter-scale geologic structure validation of shallow seismic properties along the San Jacinto fault at Sage Brush Flat, Anza, California, SCEC Contribution 7738, 2017 SCEC Annual Meeting Poster 132.

Williams, A. M., Arrowsmith, J R., Rockwell, T. K., Akciz, S. O., Grant Ludwig, L., Testing the shorter and variable recurrence interval hypothesis along the Cholame segment of the San Andreas Fault, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T43D-3077, 2016.

DiMaggio, E. N., Arrowsmith, J R., Campisano, C. J., Garello, D., Trace element investigation of tephras from the Ledi-Geraru paleontological site in Afar, Ethiopia, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T51C-2919, 2016.

Garello, D., Deino, A., Campisano, C., Kingston, J. D., Arrowsmith, J R., AN UPDATE ON THE CHEMERON FORMATION TEPHROCHRONOLOGY: CHALLENGES IN CORRELATING THE BARINGO-TUGEN HILLS HOMININ SITES AND PALEOLAKES DRILLING PROJECT (HSPDP) CORE TEPHRA TO OUTCROP TEPHRA, *Geological Society of America Annual meeting*, Paper No. 253-1, 2016.

Kleber, E., Arrowsmith, J R., DeVecchio, D. E., Rittenour, T., OPTICALLY STIMULATED LUMINESCENCE (OSL) GEOCHRONOLOGY OF AN ACTIVE BLIND THRUST FAULT, WHEELER RIDGE, CALIFORNIA, *Geological Society of America Annual meeting*, Paper No. 279-12, 2016.

Salisbury, J. B., Arrowsmith, J R., Repeat surface analysis of the Phelan Creeks reach of the San Andreas Fault, Carrizo Plain, CA, Seismological Society of America Annual meeting, 2016.

Marliyani, G. I, Arrowsmith J R., Haq, S., Neotectonics of Java, Indonesia: crustal deformation in the overriding plate of an orthogonal subduction system, Seismological Society of America Annual meeting, 2016.

Garello, D., Deino, A., Campisano, C., Kingston, J., Arrowsmith, J R., Hill, A., Tephrochronology of the East African Baringo-Tugen Hills Cores: Hominin Sites and Paleolakes Drilling Project (HSPDP), *Eos Trans. AGU*, Fall Meet. Suppl., Abstract PP13C-2307, 2015.

Helmi, H., Arrowsmith J R., Marliyani, G., Characterization of Landslide Geometry and Motion near Black Canyon City, Arizona, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract NH41B-1826, 2015.

Semken, S., Robinson, S. E., Bohon, W., Arrowsmith J R., Garnero, E., Baumback, D., Baumback, Boot, K., Dick, C., EarthScope National Office (ESNO) Education and Outreach Program and its Broader Impacts: 2015 Update and Handoff to the Next ESNO, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract ED31A-0884, 2015.

Marliyani, G., Arrowsmith J R., Helmi, H., Evidence of Multiple Ground-rupturing Earthquakes in the Past 4000 Years along the Pasuruan Fault, East Java, Indonesia, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract S33A-2754, 2015.

Flowers, R., Arrowsmith, J R., Metcalf, J., Rittenour, T., Schoene, B., Hole, J., Pavlis, T., Wagner, L., Whitmeyer, S., Williams, M., Geology, Geochronology, and EarthScope: The EarthScope AGeS Program and a new idea for a 4D Earth Initiative, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T14A-01, 2015.

Bunds, M., Toke, N., Lawrence, A., Arrowsmith, J R., Salisbury, J. B., Insights into Surface Manifestation of Aseismic vs. Coseismic Strike-Slip Faulting from UAV Imagery of Creep-Induced Surface Fracturing Along the Central San Andreas Fault, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T42A-03, 2015.

Oskin, M., Arrowsmith, J R., Nissen, E., Morelan, A., Trexler, C., Gold, P., Elliott, A., Crosby, C., Kellogg, L., POST-EARTHQUAKE GEOLOGY IN THE ERA OF UBIQUITOUS POINT CLOUDS, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract U22A-04, 2015.

Grant Ludwig, L., Akciz, S., Arrowsmith, J R., Sato, T., Chieffetz, T., Haddad, D., Salisbury, J. B., Marliyani, G., Bohon, W., Re-measuring the Slip Rate of the San Andreas Fault at Wallace Creek in the Carrizo Plain, CA, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T41A-2858, 2015.

Cowgill, E., Gold, R., Arrowsmith, J R., Friedrich, A., Secular Variation in the Storage and Dissipation of Elastic Strain Energy Along the Central Altyn Tagh Fault (86-88.5E), NW China, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T43E-02, 2015.

Kleber, E., Arrowsmith, J R., DeVecchio, D., Johnstone, S., Rittenour, T., Surface response of blind thrust shown from high resolution topographic data and updated geochronology at Wheeler Ridge, CA, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T31A-2839, 2015.

Carr, B., Clarke, A., Arrowsmith, J R., Vanderkluysen, L., The Ongoing Lava Flow Eruption of Sinabung Volcano (Sumatra, Indonesia): Observations from Structure-from-Motion and Satellite Remote Sensing, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract V13D-04, 2015.

DiMaggio, E. N., Campisano, C., Rowan, J., Dupont-Nivet, G., Deino, A., Garello, D., Reed, K., Arrowsmith, J R., LATE PLIOCENE FOSSILIFEROUS SEDIMENTARY RECORD AND THE ENVIRONMENTAL CONTEXT OF EARLY HOMO FROM AFAR, ETHIOPIA, *Geological Society of America Annual meeting*, Paper No. 102-7, 2015.

Garello, D., Campisano, C., Wynn, J., Arrowsmith, J R., Deino, A., TEPHROCHRONOLOGY AND DEPOSITIONAL ENVIRONMENTS OF THE HADAR FORMATION FROM THE NORTHERN AWASH CORES OF THE HOMININ SITES AND PALEOLAKES DRILLING PROJECT (HSPDP) , *Geological Society of America Annual meeting*, Paper No. 102-6, 2015.

Garello D., Arrowsmith R., Campisano C. Reconstructing rift-basin development and depositional environments of the Hadar Formation (Afar, Ethiopia) from three dimensional characterization of tephra marker beds. Tephra 2014: Maximizing the potential of tephra for multidisciplinary science, 2014.

Marliyani, G. I, Arrowsmith J R., Helmi, H., Geomorphic and geologic evidence of recently active faults and folds in Java, Indonesia, Seismological Society of America Annual meeting, 2014.

Kleber, E. J., Arrowsmith, J R., Akciz, S. O., Salisbury, J. B., Grant Ludwig, L., Halford, D., Delong, S. B., Marliyani, G., Henderson, W. M., 3D investigation of channel morphology across the San Andreas Fault zone using structure from motion and terrestrial laser scanning, Seismological Society of America Annual meeting, 2014.

Kleber, E., Arrowsmith, J R. (2014) New high-resolution topographic data and updated tectonic geomorphology at Wheeler Ridge, California, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T41C-4663.

DiMaggio, E., Arrowsmith, J R., Campisano, C., Johnson, R., Deino, A., Warren, M., Fisseha, S., Cohen, A. (2014) Investigations of young (¡ 2.94 Ma) Hadar Formation deposits and their implication for basin development in southern Afar, Ethiopia, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T53B-4681.

Marliyani, G., Arrowsmith, J R. (2014) Tectonic Geomorphology of the Hanging Wall Blocks of the Cimandiri Fault Zone, West Java, Indonesia, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T41C-4650.

Semken, S., Robinson, S., Bohon, W., Schwab, P., Arrowsmith, J R., Garnero, E., Pettis, L., Baumback, D. (2014) Earthscope National Office Education and Outreach Program: 2014 Update on Broader-Impacts Activities and Outcomes, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract ED23A-3480.

Del Vecchio, J., Arrowsmith J R., Alfano, F., De' Michieli Vitturi, M., Clarke, A. B., Pearthree, K., Till, R., Aspect-related differences in sediment transport rates on cinder cones, San Francisco Volcanic Field REU, *Geological Society of America Annual meeting*, Paper No. 223-2, 2014.

Pearthree, K., Clarke, A. B., Arrowsmith J R., Anderson, K. C., Alfano, F., Del Vecchio, J. Dekko, R., De' Michieli Vitturi, M., Till, R., Investigating the relations among eolian dust accumulation, rill formation, and morphologic age for cinder cones, San Francisco Volcanic Field REU, *Geological Society of America Annual meeting*, Paper No. 223-4, 2014.

Till, R. T., Arrowsmith J Ramon, Alfano, F., Clarke, A. B., De' Michieli Vitturi, M., Del Vecchio, J., Pearthreee, K., Muirhead, J. D., Carr., B. B., Cinder cones with complex original forms and implications for morphologic dating, *Geological Society of America Annual meeting*, Paper No. 234-13, 2014.

5.5 Other Abstracts–since 2014

Arrowsmith, J R., Crosby, C., Gross, B., Nandigam, V., Phan, M., (2017, April) Managing the explosion of high resolution topography for active fault research, oral presentation and abstract at the 2017 Seismological Society of America Meeting.

Crosby, C. J., Arrowsmith, J R., Nandigam, V., Expanding the Impact of Photogrammetric Topography Through Improved Data Archiving and Access, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract EP24C-01, 2016.

Donnellan, A., Ben-Zion, Y., Arrowsmith, J R., How does the 2010 El Mayor Cucapah Earthquake Rupture Connect to the Southern California Plate Boundary Fault System, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract G32A-07, 2016.

Nandigam, V., Crosby, C. J., Arrowsmith, J R., A community dataspace for distribution and processing of "long tail" high resolution topography data, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract IN53C-1904, 2016.

Elliott, A. J., Walker, R. T., Parsons, B., Ren, Z., Ainscoe, E., Abdrakhmatov, K., Mackenzie, D., Arrowsmith, J R., Gruetzner, C., Detailed Mapping of Historical and Preinstrumental Earthquake Ruptures in Central Asia Using Multi-Scale, Multi-Platform Photogrammetry, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract NH52B-03, 2016.

Landgraf, A., Strecker, M., Arrowsmith, J R., Metzger, S., Codilean, A., Korup, O., Dzumabaeva, A., Abdrakhmatov, K., Challenges in understanding strain localization and deformation at different spatiotemporal scales - examples from the north-central Tien Shan and northern Pamir, Central Asia, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T22A-04, 2016.

Nissen, E.k Lajoie, L., Arrowsmith, J R., Glennie, C., Hinojosa Corona, A., Oskin, M. E., Shallow slip deficit and low-anlge detachment faulting in the 2010 El Mayor-Cucapah (Mexico) earthquake revealed with differential lidar, Seismological Society of America Annual meeting, 2016.

Crosby, C., Nandigam, V., Phan, M., Youn, C., Baru, C., Arrowsmith, J R. (2014) OpenTopography: Addressing Big Data Challenges Using Cloud Computing, HPC, and Data Analytics, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract IN11C-3634.

Robinson, S., Ellins, K., Semken, S., Arrowsmith, J R. (2014) EarthScope Education and Outreach: Accomplishments and Emerging Opportunities, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract ED23A-3483.

Hodges, K., Whipple, K., Kirby, E., Arrowsmith, J R., Shirzaei, M. (2014) Modification of the Himalayan orogenic wedge by late Cenozoic southeastward flow of Tibet, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T11E-08.

Nissen, E., Arrowsmith, R., Borsa, A., Glennie, C., Hinojosa-Corona, A., Maruyama, T., Oskin, M. (2014) New Observations of Coseismic Fault Zone Deformation from Differencing Pre- and Post-Earthquake Lidar Data, *Eos Trans. AGU*, Fall Meet. Suppl., Abstract T13C-4681.

6 Other scientific activities

6.1 Meeting and Short course organization

Numerous High Resolution Topography Courses: See `http://www.opentopography.org/community/workshops`

International Quality Network Potsdam University: Geology, geomorphology, and paleoseismology of tectonically active regions; workshop organizer (with A. Friedrich and M. Strecker; Potsdam University) and course lecturer, 2002 and 2003.

GV International Conference–96th Annual Meeting Geologische Vereinigung Potsdam 2006: Geology and geomorphology of tectonically active regions; workshop organizer (with A. Friedrich, G. Hilley, A. Mulch, and M. Strecker) and course lecturer, 2006.

Short Course: Techniques in Active Tectonic Study; Ramon Arrowsmith and Gayatri Marliyani (Arizona State University) and Mudrik Daryono (LIPI and GREAT). 2013 Course at Research Centre for Geotechnology, Indonesia Institute of Sciences, Bandung, Indonesia, and Graduate Research on Earthquake and Active Tectonics (G.R.E.A.T) ProgramInstitute of Technology Bandung (ITB), Indonesia. `http://activetectonics.la.asu.edu/lipi`

Understanding Earth-surface processes in the alpine environment from high resolution topopgraphy; Paolo Tarolli (Uni Padova), Paola Passalacqua (UT Austin), Jean-Stephane Bailly (AriTech Paris), Dimitri Lague (CNRS), Ramon Arrowsmith (ASU). European Geosciences Union Summer School 2013, San Vito di Cadore, Dolimiti, Italy.

VISES SCEC Workshop on High Resolution Topography Applied to Earthquake Studies; Ramon Arrowsmith (Arizona State University), Koji Okumura (Hiroshima University), Edwin Nissen (Colorado School of Mines), Tadashi Maruyama (AIST), Christopher Crosby (UNAVCO), Mike Oskin (UC Davis), Shinji Toda (Tohoku University). September 18-20, 2013 Earthquake Research Institute (ERI), The University of Tokyo, Japan. `http://www.opentopography.org/index.php/resources/VISES_JPN13`

EarthScope National Meeting; Ramon Arrowsmith (Arizona State University) and Organizing Committee. June 13-17, 2015 Stowe Vermont
`http://www.iris.edu/hq/workshops/2015/06/earthscope_national_meeting_2015`

5th Structural Geology and Tectonics Forum; Co organizer. January 4-9, 2018, Tempe, Arizona
`https://serc.carleton.edu/NAGTWorkshops/structure/2018_Forum/`

6.2 Major international field expeditions

- Pamir–Alai region of Kyrgyzstan: 1996, 1999, 2017, 2018.
- Northern Tien Shan region of Kyrgyzstan and Kazakhstan: 2004, 2005, 2007, 2016.
- Altyn Tagh Fault system, southern Xinjiang, China: 1998, 1999, 2000, 2007, 2012.
- Northwestern Himalaya, Himachal Pradesh, India: 2001, 2017.
- Ladakh Himalaya, Karakoram, India, 2010.
- Afar region, Ethiopia: 2002, 2004, 2005, 2006, 2008, 2012, 2013, 2014, 2015, 2018.
- Southern Baja California, Mexico: 2006.
- Lake Malawi: 2011.
- Eastern Bolivian foreland: 2011.
- Indonesia (Java): 2011, 2012.

7 Research funding

Funded grants–Principal Investigator	Sponsor	Duration	$
Historic and paleoseismic behavior of the south–central San Andreas Fault between Cholame and the Carrizo Plain	Southern California Earthquake Center	1/1/97–12/31/01	$130,400
Thrust fault slip rates determined from coupled tectonic and geomorphic models of active faults and folds in the San Francisco Bay area: Collaborative research with ASU and UC Davis	US Geological Survey, National Earthquake Hazards Reduction Program	3/1/97–2/28/99	$87,380
Geologic mapping of Cave Creek and vicinity, central Arizona, with the aid of advanced remote–sensing methods	US Geological Survey, Educational Mapping Program	8/1/97–7/31/98	$7,500
Collaborative Research: Magnitude of slip, slip rate, and slip distribution along the Cenozoic Altyn Tagh Fault system	National Science Foundation–Continental Dynamics	7/1/98–6/30/01	$179,990
Active faults in zones of continental collision: Quaternary deformation in the Pamir–Tien Shan region, central Asia	National Science Foundation–Tectonics	7/1/98–6/30/00	$120,243
The effects of tectonic processes and climatic fluctuations on landscape development (with G. Hilley)	NASA Earth Systems Science Fellowship Program	9/1/99–8/31/02	$44,000
Collaborative Research: Arizona State University and University of Texas El Paso: Creation of a Geospatial data system for the transition between the Colorado Plateau and Basin and Range provinces	National Science Foundation–Information Technology Research	10/1/01–9/30/04	$200,000
ITR Collaborative Research: GEON: A Research Project to Create Cyberinfrastructure for the Geosciences	National Science Foundation–Information Technology Research	9/1/02–8/31/07	$400,000
Characterization of paleoseismic data resolution using Monte Carlo statistics (with J. Young)	Southern California Earthquake Center	1/1/03–12/31/03	$20,000
Geological mapping of the San Andreas Fault near Parkfield California: A proposal for support of M.S. student Lela Prashad at Arizona State University	US Geological Survey, Educational Mapping program	3/1/03–2/28/04	$13,881
Kilometer-scale fault zone structure and kinematics along the San Andreas Fault near Parkfield, California	National Science Foundation–Tectonics	07/01/03–06/30/05	$187,955

Funded grants–Principal Investigator, continued	Sponsor	Duration	$
Integrated investigation of active deformation in the northern Tien Shan, Kyrgyz Republic: neotectonics, earthquake geology, and seismology	Civilian Research and Development Foundation	8/1/03–7/31/05	$12,700
Rupture history of the San Andreas Fault at Van Matre Ranch, Carrizo Plain, California: Collaborative Research with University of California, Irvine and Arizona State University	US Geological Survey, National Earthquake Hazards Reduction Program	2/1/04–1/31/05	$20,000
Multi-cycle rupture history of the San Andreas Fault in the Carrizo Plain: Collaborative Research with UC Irvine	National Science Foundation–Tectonics	07/1/04–06/30/06	$90,987
Collaborative Research: Neotectonics across an active oblique-divergent plate margin, southwestern Gulf of California	National Science Foundation–Margins	08/01/05–07/31/08	$164,152
Application of LiDAR data to constraining a late Pleistocene slip rate and vertical deformation of the Northern San Andreas fault, Fort Ross to Mendocino, California: Collaborative research between Arizona State University and the U. S. Geological Survey	US Geological Survey, National Earthquake Hazards Reduction Program	01/01/06–12/31/06	$60,000
Tectonic geomorphology and earthquake geology of the 1857 reach of the San Andreas Fault: a new look from Airborne Laser Swath Mapping	Southern California Earthquake Center	05/01/06–04/30/07	$19,000
Collaborative research: Is the Holocene slip rate along the Altyn Tagh Fault 10 mm/yr, 30 mm/yr, or both? Infilling a 2-6 ka gap using ^{14}C, OSL, and stream reconstructions	National Science Foundation–Tectonics	06/01/06–5/31/09	$195,494
Renewal: Integrated investigation of active deformation in the northern Tien Shan, Kyrgyz Republic: neotectonics, earthquake geology, and seismology	Civilian Research and Development Foundation	12/1/06–12/31/08	$13,935
Paleoseismological characterization of earthquakes at Parkfield	US Geological Survey, National Earthquake Hazards Reduction Program	01/01/07–12/31/07	$43,000
Supplement to: Rupture History of the San Andreas Fault in the Carrizo Plain prior to 1200 AD	Southern California Earthquake Center	02/01/07–1/31/08	$25,000
Collaborative Research: Slip-per-event rupture history of the San Andreas fault in the Carrizo Plain: Was the 1857 earthquake characteristic?	National Science Foundation–Tectonics	07/01/07–6/30/09	$158,387

Funded grants–Principal Investigator, continued	Sponsor	Duration	$
GeoEarthScope LIDAR Project LiDAR point cloud data processing and delivery workflow	GeoEarthscope subcontract from UNAVCO	1/1/07–12/31/08	$150,441
Geomorphic and Geologic Characterization of Precarious Rock Zones in Low Seismicity Regions	Southern California Earthquake Center	02/01/08–12/31/09	$29,270
Collaborative Research: Facility Support: Building the INTERFACE facility for cm-scale, 3D digital field geology (includes supplement)	National Science Foundation–EAR Instrumentation and Facilities	09/01/07–8/31/10	$186,840
Slip Along the San Andreas Fault Associated With the Great 1857 Earthquake and Preceding Earthquakes Derived From "B4" LiDAR High Resolution Topographic Data	Southern California Earthquake Center	02/01/09–12/31/09	$28,000
Rupture history of the San Andreas Fault in the Carrizo Plain: Supplemental excavations, geochronology, and intern support	Southern California Earthquake Center	02/01/09–12/31/09	$18,000
The effect of structural complexity and fault roughness on fault segment size and multi-segment rupture probability	Southern California Earthquake Center	02/01/09–12/31/09	$15,000
A Collaborative Project: Comparison and Validation of Earthquake Simulators	Southern California Earthquake Center	02/01/09–12/31/11	$39,000
Tectonic geomorphology of California's active faults from high resolution topography: ACCESS-G fellowship	Southern California Earthquake Center	02/01/09–12/31/09	$53,503
Facility Support: OpenTopography - A National Hub for High Resolution Topographic Data, Tools, and Knowledge	National Science Foundation–EAR/IF	09/15/09–09/14/12	$307,463
RAPID: Airborne Lidar Scan of the 4 April 2010 Sierra El Mayor, Baja California Earthquake Rupture	National Science Foundation–EarthScope and International Programs	04/19/10–04/18/11	$112,381
Repeatability, accuracy, and precision of surface slip measurements from high-resolution topographic data Collaborative Research with Arizona State University and San Diego State University	US Geological Survey, National Earthquake Hazards Reduction Program	1/1/2011–12/31/2011	$40,015

Funded grants–Principal Investigator, continued	Sponsor	Duration	$
Bridging Data, New Technologies, and Communities to Enable and Communicate EarthScope Exploration and Discovery (PI with Semken, Garnero, Fouch) (34% RID; with $100k supplements)	National Science Foundation EarthScope National Office	1/1/2012–12/31/2015	$2,450,744
Preliminary Analysis of the El Mayor-Cucapah Earthquake Surface Rupture with Pre- and Post-Event Airborne Lidar Data	Southern California Earthquake Center	1/1/2011–12/31/2011	$23,071
New Slip Rate estimates from Wallace Creek and Phelan Creek Paleoseismic Sites. Re-sampling, Re-dating, and Re-Synthesizing	Southern California Earthquake Center	1/1/2011–12/31/2011	$19,844
Element F4 of the Uniform California Earthquake Rupture Forecast 3: Compile Slip in Last Event Data	California Earthquake Authority	3/4/2011–6/30/2012	$23,502
Collaborative Research: 3-D near-field coseismic deformation from differential LiDAR with application to the El Mayor-Cucapah earthquake (PI with Saripalli)	National Science Foundation–EarthScope Program	1/1/2012–12/31/2014	$99,258 (50% RID)
Paleoseismic investigation along the inferred northernmost extent of the 1857 rupture: Do large southern San Andreas Fault ruptures extend into the creeping section?	Southern California Earthquake Center	1/1/2012–12/31/2012	$17,644
New Slip Rate estimates from Wallace Creek and Phelan Creek Paleoseismic Sites. Re-sampling, Re-dating and Re-Synthesizing	Southern California Earthquake Center	1/1/2012–12/31/2012	$15,000
Centimeter-resolution fault topography and earthquake displacements from UAV photogrammetry (PI with Saripalli)	Southern California Earthquake Center	1/1/2012–12/31/2012	$16,133
Determining the cause of a significant ground deformation event between A.D. 950 and A.D. 1400 at the Dry Lake Valley Paleoseismic Site along the central creeping section of the San Andreas Fault (Lead PI: Nathan Toke)	Southern California Earthquake Center	1/1/2013–12/31/2013	$15,000
Collaborative Research: OpenTopography: A cyberinfrastructure-based facility for high-resolution topography data and tools	National Science Foundation–Geoinformatics	7/1/2012–6/30/2015	$199,221
Collaborative Research: REU Site: Integrative Approach to Landscape Evolution in a Monogenetic Volcanic Field. San Francisco Volcanic Field, Northern Arizona	Northern Arizona Arizona University	5/26/2013–9/1/2014	$40,226

Funded grants–Principal Investigator, continued	Sponsor	Duration	$
Advances in imaging shallow fault zone deformation with differential LiDAR: a VISES Collaboration	Southern California Earthquake Center	1/1/2014–12/31/2014	$12,012
Exploration of two new paleoseismic site locations in the Carrizo Plain National Monument land for testing the variable slip/variable magnitude earthquake hypothesis along the northern section of the southern San Andreas Fault	Southern California Earthquake Center	1/1/2014–12/31/2014	$8,314
Three Dimensional excavation of a 5m offset channel in the Carrizo Plain: Sieh31	Southern California Earthquake Center	1/1/2014–12/31/2014	$10,344
Collaborative Research: EarthScope Geochronology: A Student Research and Training Program and EarthScope Institute	National Science Foundation–EarthScope	7/1/2014–11/30/2016	$238,186
Collaborative Research: Low-cost imaging and analysis of the August 24, 2014 M6.0 South Napa California earthquake surface rupture (RAPID)	National Science Foundation–EarthScope	10/1/2014–9/31/2015	$16,258
The Role of Climate in the Formation of Geomorphic Features Used for Fault Offset Measurement	Southern California Earthquake Center	1/1/2015–12/31/2015	$25,000
Updated Spatial and Temporal Mapping of the Geomorphic Evolution of Wheeler Ridge and Application to Blind Thrusts in California (with DeVecchio)	Southern California Earthquake Center	1/1/2015–12/31/2015	$25,000
Short- and Long-Term Slip Histories Along the South-Central San Andreas Fault: Completing OSL and 14C Geochronology of the Phelan Creeks and Van Matre Ranch Sites, Carrizo Plain, CA	Southern California Earthquake Center	1/1/2016–12/31/2016	$19,006
Testing the shorter and variable recurrence interval hypothesis along the Cholame segment of the San Andreas Fault	Southern California Earthquake Center	1/1/2016–12/31/2016	$28,500
Low cost structure from motion imaging of faults in Southern California	JPL SURP	9/30/2016–9/30/2017	$25,000
Collaborative Research: AGeS2 (Awards for Geochronology Student research) Program: Democratizing access to geochronology and promoting interdisciplinary science	National Science Foundation	9/1/2018–8/31/2021	$687,836
		Total PI	$7,189,016

Funded grants–Co-I	Sponsor	Duration	Total $	JRA $
Geological Mapping of the White Tank Mountains, Arizona with the aid of advanced remote sensing methods (with Stephen J. Reynolds)	US Geological Survey, Educational Mapping program	8/1/96–7/31/97	$17,000	$8,500
Impact of extent of wetting in arid region geotechnical practice (with S. and W. Houston and K. Walsh)	National Science Foundation	10/1/96–9/30/00	$270,000	$29,119
Land–use change and ecological processes in an urban ecosystem of the Sonoran desert (core scientist)	National Science Foundation–LTER	8/1/97–7/31/02	$4.3M	$81,037
Geologic mapping of the Union Hills, central Arizona, with the aid of advanced remote sensing methods (with Edmund Stump)	US Geological Survey, Educational Mapping Program	5/1/98–4/30/99	$10,000	$5,000
Proposal to develop a Geographic Information System (with Jana Fry)	IGA: Ak–Chin Indian Community and ASU	9/1/99–8/31/01	$44,405	$15,600
Multi–Spectral Remote Sensing of Brush Fire Scars in Arid Urban Regions: Analysis of Future Fire and Flooding Hazards	NASA MTPE program (Mike Ramsey, PI)	5/1/00–4/30/03	$160,000	$27,463
Integrative Graduate Education and Research and Training in Urban Ecology (senior faculty)	National Science Foundation	6/1/00-5/31/04	$2.7M	$16,623
Gravity and geophysical study of the Pool 24 subsidence area, Scottsdale, AZ (with Jim Tyburczy)	Central Arizona Project	5/15/05-3/31/03	$25,322	$12,661
Landuse and Landscape Socioecology in the Mediterranean Basin: A Natural Laboratory for the Study of the Longterm Interaction of Human and Natural Systems (C. M. Barton PI and others; Co-I)	National Science Foundation–Biocomplexity	01/15/05-1/14/09	$1,355,253	$203,288
Central Arizona Phoenix LTER: Phase 2 (C. Redman, N. Grimm PIs and others; Co-I)	National Science Foundation–LTER	12/1/04-11/30/10	$4,919,954	$196,798
Integrative Graduate Education and Research and Training in Urban Ecology: renewal (Co-I; 11%RID)	National Science Foundation	6/15/05-5/31/10	$3.2M	$352,000

Funded grants–Co-I	Sponsor	Duration	Total $	JRA $
East Valley Water Forum: visualization for decision-making	East Valley Water Forum	1/11/05-4/31/06	$80,056	$12,000
State of Arizona Seismic Hazard Update (with Fouch)	Federal Emergency Management Agency	06/01/08–05/31/10	$45,613	$22,807
Geoinformatics-based Data Integration for Study of the Pliocene Fossil-bearing Strata of the Hadar Basin (Afar, Ethiopia)	Late lessons from early history: the SHESC transdisciplinary research program	01/01/08–12/31/12	$357,832	$178,916
Collaborative Research: Paleoanthropological investigation of the Ledi-Geraru hominin site (Afar, Ethiopia)	National Science Foundation–Biological Anthropology	1/15/2012–1/14/2014	$239,745	$47,949
Collaborative Research: The Hominin Sites and Paleolakes Drilling Project: Acquiring a high resolution paleoenvironmental context of human evolution	National Science Foundation–Sedimentary Geology and Paleobiology Program	1/1/2012–12/31/2014	$243,888	$48,777
Earth Science Education and Outreach Provider Summit	National Science Foundation–Division of Earth Sciences	1/15/2012–1/14/2013	$33,050	$16,525
FESD Type I: Earth system dynamics and its role in human evolution in Africa: lead PI Andrew Cohen, University of Arizona (ASU lead is Campisano)	National Science Foundation	6/1/2013–5/31/2018	$542,744	$217,097
Collaborative Proposal: Paleoanthropology of the Ledi-Geraru: Filling in a temporal gap in hominin evolution (ASU lead is Reed)	National Science Foundation–Biological Anthropology Program	2/15/2015–2/14/2018	$258,434	$64,609
		Total Co-I		$1,556,769

JRA $ = % recognition x Total $ or $ spent in Geological Sciences Department/SESE (including overhead)

8 Teaching

8.1 Courses taught at Arizona State University

- GLG 101, Introduction to Geology (Fall, 1995): 220 student lecture course was taught using innovative instructional technology and in–class observations.
- GLG 103, Introduction to Geology Laboratory (Fall, 2003): I oversee ∼30 laboratory sessions (with a total of ∼1100 students) taught by 13 teaching assistants and actually teach one of the laboratories.
- GLG 110, Geologic Disasters and the Environment (Fall, 2002, 2010): 75 person lecture course with two labs emphasizing the interactions between humans and their environment (`http://glg110.asu.edu/2002`). Significantly revamped course and handed it over to Stan Williams. Taught again with significant updates with Amanda Clarke in 2010.
- GLG 310, Structural Geology (Spring, 1996, 1997, 1998, 1999, 2000, 2001, Fall 2004, 2012, 2013) Investigation and survey of geologic structures and the mechanical processes involved in their formation (`http://arrowsmith310.asu.edu`).
- GLG 362, Geomorphology (Fall, 1996, 1998, 2000, 2002, 2006): This course focuses on the observation and analysis of earth surface processes and the development of landforms and landscape.
- GLG 410, Computers in Geology (Fall, 1997, 1999, 2000, 2007, 2011, 2015, Spring 2009 with Fouch): This course is designed to teach analytical thinking in geology using computing applications. Significantly revamped course for 1999–2000, and again in 2007 and lots of new video content in 2011 (`http://arrowsmith410-598.asu.edu/`).
- GLG 416, Field Geophysics (with James A. Tyburczy) (Spring, 1997): This course provides an introduction to field geophysical methods including refraction seismology, gravity, magnetics, electromagnetic methods.
- GLG 451, Field Geology I (Spring 2005, 2006, 2007, 2011, 2012, 2013, 2014, 2015, 2016, 2018): This course provides an introduction to geology in the field.
- GLG 452, Field Geology II (Summer, 2004, assistant in 2003, 2005, 2006): This course provides a capstone to the major with emphasis on geology in the field.
- GLG 455/598, Advanced Field Geology (with Philip A. Pearthree, Arizona Geological Survey in 2001) (Spring, 1998, 2003): Students gain field experience with a variety of environmental and applied mapping problems (`http://www.public.asu.edu/~arrows/advfield/`).
- GLG 490/598, Desert surface processes and Quaternary geology seminar (Fall, 1997): Brought together students and faculty from diverse disciplines for consideration of current and classic research results and field sites.
- GLG 490/598, Tectonic Geomorphology (with Professor Kelin Whipple) (Spring, 2008): This course provided an overview of a broad range of topics in Tectonic Geomorphology varying from earthquake geology to orogenic-scale tectonic and surface process interaction (`http://whipple_arrowsmith598.asu.edu/`).
- ASM498/GPH591/GLG598/GLG490: Remote Sensing and Quaternary Landscapes (Spring, 2006): Collaborative teaching with Archeology and Geography faculty and students centered on mapping and interpreting landscapes using remote sensing data.
- GLG 510, Advanced Structural Geology (with Stephen J. Reynolds in 1998) (Fall, 1998, 2005, Spring 2009): Students gain experience with advanced structural geology problems (`http://arrowsmith510.asu.edu/`)

8.2 Student mentoring and collaboration

8.2.1 Postdoctoral scholars and current position if known

- Dr. Edwin Nissen–SESE Exploration Post doctoral scholar co supervised with Sri Saripalli, September 2011 – August 2012. Assistant Professor Department of Geophysics, Colorado School of Mines.
- Dr. Wendy Bohon–EarthScope National Office Post doctoral scholar, May 2014–June 2015. Education and Outreach specialist, IRIS.
- Dr. Harmony Colella–SESE Exploration Post doctoral scholar co supervised with Steve Semken and Ed Garnero, August 2014–June 2016. Earthquake Early Warning specialist, CalOES/UCB.
- Dr. Chelsea Scott–National Science Foundation Post doctoral scholar, January 1, 2017–Present.

8.2.2 Graduated students and current position if known

- **Ph.D. Dissertations supervised**

1. George Hilley, Ph.D., Landscape development of tectonically active areas, Arizona State University, May 2001. Associate Professor of Geological and Environmental Sciences, Stanford University.
2. Lee Amoroso, Ph.D., Studies in Quaternary geology of Arizona: Active tectonics *and* relationship of soils to surficial geology, Arizona State University, August 2001. Research Geologist, US Geological Survey, Flagstaff, Arizona.
3. Sarah E. Robinson, Ph.D., (co–advisor with Philip Christensen), Investigation of geomorphic processes on arid piedmonts using field studies, remote sensing analysis and cosmogenic dating, Arizona State University, August 2002. Assistant Professor, US Air Force Academy.
4. Jeri Young, Ph.D., Characterization of fault behavior along the central San Andreas Fault, California, Arizona State University, May 2004. Research geologist, Arizona Geological Survey.
5. Olaf Zielke, Ph.D., How fault geometric complexity and frictional properties affect seismic fault behavior and accumulation of slip along strike-slip faults, December 2009. Senior Research Scientist, King Abdullah University of Science and Technology.
6. Melanie Busch Coyan, Ph.D. (co–advisor with S. Reynolds), Late Quaternary Normal Faulting and Hanging Wall Basin Evolution of the Southwestern Rift Margin From Gravity and Geology, B.C.S., MX *and* Exploring the Influence of Text-Figure Format on Introductory Geology Learning, May 2011.
7. Nathan Toké, Ph.D., Earthquake Geology, Hazard, Urban Form, and Social Vulnerability along the San Andreas Fault, August, 2011. Associate Professor, Department of Earth Sciences, Utah Valley University.
8. Erin DiMaggio, Ph.D., The Geologic History of Central and Eastern Ledi-Geraru, Afar, Ethiopia, December, 2013. Assistant Research Scientist, Department of Geosciences, Pennsylvania State University.
9. Wendy Bohon, Ph.D., (co-advised with Kip Hodges), Late Cenozoic-recent tectonics of the southwestern margin of the Tibetan Plateau, Ladakh, northwest India, May, 2014. Education and Outreach specialist, IRIS.
10. David Haddad, Ph.D., Effects of fault segmentation, mechanical interaction, and structural complexity on earthquake-generated deformation, May, 2014. Research Geologist, ConocoPhillips.
11. Jeffrey Lockridge, Ph.D., (co-advised with Tom Sharp), Using micro-scale observations to understand large-scale geophysical phenomena: Examples from seismology and mineral physics, December 2015. Assistant professor, Earth Sciences, North Central Michigan College.
12. Gayatri Marliyani, Ph.D., Neotectonics of Java, Indonesia: Crustal Deformation in the Overriding Plate of an Orthogonal Subduction System, May 2016. Assistant Professor, Gadjah Mada University, Yokyakarta, Indonesia.

13. James Barrett Salisbury, Ph.D., Coupling tectonic geomorphology and paleoseismology for understanding of earthquake recurrence, December 2016. Research Geologist, Alaska Division of Geological and Geophysical Surveys.

- **M.S. Theses supervised**

1. Joshua Roering, M.S., (co–advisor with David D. Pollard), Active Tectonics of Buried Thrust Faults, San Francisco Bay Area, Great Valley, and Los Angeles Basin, California, Stanford University, June 1995. Associate Professor, Department of Geological Sciences, University of Oregon.
2. Keenan Murray, M. S., Using Joint and Fault Structures Along the Tortilla Caldera in the Superstition Mountains, Arizona to Infer the Development of the Stress Field with Regional (Basin and Range) and Local (Volcanic) Deformation Sources, Arizona State University, May 1997. Project Manager, Ninyo and Moore, Phoenix, Arizona.
3. Sean McManus, M. S., Digital Elevation Model Analysis Applied to Active Tectonic Study in Central Asia, Arizona State University, December 1998. National Solar Observatory, Tucson, AZ.
4. Heidi D. Stenner, M. S., (co–advisor with Phil Pearthree (AZ Geological Survey) and Stephen J. Reynolds), A Paleoseismic Investigation of a Portion of the Hurricane Fault, Northwestern Arizona and Southwestern Utah, Arizona State University, December 1998. Formerly at US Geological Survey, Menlo Park, CA, now Senior Scientist at Exponent.
5. Stephen Holloway, M. S., (co–advisor with Edmund Stump), Proterozoic through Quaternary Geology of the Union Hills, North Phoenix, Arizona, Arizona State University, May 1999. Research specialist, Dept. Geology and Geophysics, University of Oklahoma.
6. Elizabeth Zima (née Stone), M. S., Geomorphology, Structure, and Paleoseismology of the central Cholame Segment, Carrizo Plain, California, Arizona State University, May 2000. Formerly Project manager, Ninyo and Moore, Phoenix, Arizona.
7. Ken Fergason, M. S., (co–advisor with James A. Tyburczy), Investigation of changes in groundwater elevation associated with Tempe Town Lake, Arizona State University, December 2000. Project manager, AMEC, Flagstaff, Arizona.
8. Zack Washburn, M. S., Quaternary tectonics and earthquake geology of the central Altyn Tagh fault, Xinjiang, China: implications for tectonic setting and process along the northern margin of the Tibetan Plateau, Arizona State University, August, 2001. Project manager, H and K Consultants in Grass Valley, California.
9. Lela Prashad, M. S., Urban materials and temperature: relating ground and air variables to land use, socioeconomics and vegetation in Phoenix, Arizona, Arizona State University, August 2004. Director, 100 Cities Project at Arizona State University.
10. Mimi Diaz, M. S., Lithology and erosion styles associated with the Rodeo-Chedeski and Aspen fires, Arizona, Arizona State University, August 2004.
11. Nathan Toké, M.S., Paleoseismology, slip budget, and fault behavior along the Parkfield segment of the San Andreas Fault, Arizona State University, December, 2005. Assistant Professor, Department of Earth Sciences, Utah Valley University.
12. Amanda Perkins, M.S., (co–advisor with Jim Tyburczy), Analyzing INSAR, bedrock topography, and hydrogeology to interpret land subsidence patterns, Arizona State University, August, 2006. Geologist, Speedie and Associates, Inc.
13. Maurits Thayer, M.S., Structural geology of the San Andreas Fault Zone at Middle Mountain, near Parkfield, Central California, Arizona State University, May, 2006. Geologist, Conoco-Phillips.
14. Christopher Crosby, M. S., A geoinformatics approach to LiDAR data distribution and processing with applications to geomorphology, Arizona State University, August, 2006. UNAVCO.
15. Jessica Block, M. S., 3-Dimensional Immersive Visualization For Regional Water Planning, Arizona State University, August, 2007. Research Specialist, CalIT2 Facility, UC San Diego.

16. Erin DiMaggio, M. S., Volcanic and stratigraphic characterization of Pliocene tephra from the Ledi-Geraru region of Afar, Ethiopia, August, 2007. Research Scientist, Pennsylvania State University.
17. Paul Ivanich, M. S., Investigation of subsidence using gravity and INSAR in Scottsdale, Arizona, December, 2007. Hydrology Division - Geophysics/Surveying Unit, Arizona Department of Water Resources.
18. Megan Muretta, M. S., Holocene earthquake geology of the central Altyn Tagh fault, Xinjiang, China: Implications for recurrence interval, strain release rate, and fault behavior, May 2009.
19. Haddad, D. E., M. S., 2010. Geologic and geomorphic characterization of precariously balanced rocks. MS thesis, Arizona State University, Tempe, Arizona, 207 pp. Conoco-Phillips.
20. Sarah E. Robinson, M. S., Integrating LiDAR Topography Into the Study of Earthquakes and Faulting, 99 pp., August 2011. Education and Outreach Specialist, Instructor, Grand Canyon University.
21. Jeff Lockridge, M. S. (co-advisor with Matthew Fouch), Spatial and Temporal Analysis of Seismicity Within Arizona During the Deployment of the EarthScope USArray Transportable Array (April 2006 - March 2009), August, 2011. Ph.D. ASU School of Earth and Space Exploration.
22. Emily Kleber, M.S., Surface Response to Slip Along a Propagating Blind Thrust Fault Wheeler Ridge, California, December 2015, 95 p. Hazards geologist, Utah Geological Survey.
23. Hurien (Hendri) Helmi, M.S., Characterization of Landslide Geometry and Movement Near Black Canyon City, Arizona, May 2016. Lecturer, Geological Engineering Department, Sekolah Tinggi Teknologi Nasional, Yogyakarta, Indonesia.
24. Adam M. Wade, M.S., Geologic and structural characterization of shallow seismic properties along the San Jacinto Fault at Sage Brush Flat, Southern California. Arizona State University, August 2018. Geoscience consulting professional.

8.2.3 Graduate student advising

- Dominique Garello, Ph.D. candidate, (co-advised with Chris Campisano in ASU's School of Human Evolution and Social Change).
- Alana Williams, Ph.D. pre-candidate.
- Emily Zawacki, Ph.D. candidate, (co-advised with Chris Campisano in ASU's School of Human Evolution and Social Change).
- Tyler Scott, M. S. candidate

8.2.4 Undergraduate project supervision

- Cali Trammel, undergraduate research project on Tephrachronology of the Eastern Ledi Geraru, 2018.
- Bryan MacFarlane, undergraduate senior thesis, Subsidence and earth fissuring in east Scottsdale, Arizona, December 2007.
- David Haddad, undergraduate senior thesis, Mechanical fault interaction and tectonic geomorphology on the Volcanic Tableland, Owens Valley, California, December 2006. ASU Active Tectonics research group, M.S. program.
- Amanda MacLeod, undergraduate senior thesis, Artificial hydrologic controls and the geomorphology of the greater Phoenix area, September 2003. University of Oregon Department of Geological Sciences M.S. program.
- Matthew Baillie, undergraduate senior thesis, Subsidence and Fissuring in the Casa Grande-Maricopa (Arizona) area due to groundwater withdrawal, May 2001. University of Arizona Ph.D. Hydrology 2005.

8.2.5 Research Experience for Undergraduates (REU) mentoring

- Emily Starke, University of Tulsa, 2005. *Paleoseismology along the San Andreas Fault*–Southern California Earthquake Center SURE intern.
- Brian Campbell, Elizabeth City State University, 2006. *Tectonic geomorphology and earthquake geology of the 1857 reach of the San Andreas Fault: a new look from Airborne Laser Swath Mapping*–Southern California Earthquake Center SURE intern.
- Emma Gleeman, Brown University, 2013. *Erosion of cinder cones in the San Francisco Volcanic Field*–San Francisco Volcanic Field REU
- Sarah Zibart, Western Kentucky University, 2013. *Using cinder cone morphology to constrain age*–San Francisco Volcanic Field REU
- Ryan Till, University of Buffalo, 2014. *Exploring variable original forms in the initial modifications of cinder cones*–San Francisco Volcanic Field REU
- Joanmarie Del Vecchio, Pomona College, 2014. *Spatially variable transport rates and the topographic development of cinder cones*–San Francisco Volcanic Field REU
- Kristin Pearthree, Oberlin College, 2014. *Insights on the topographic development of cinder cones and the transition to fluvial erosion using physical experiments and soil constraints*–San Francisco Volcanic Field REU

8.2.6 Visiting colleagues

- Federica Ferrarini, University of Chieti, Italy, 2017-2020
- Marta Ferrater Gomez, University of Barcelona, Spain, 2014-2015
- James Muirhead, University of Idaho, 2014
- Tadashi Maruyama, Japanese Geological Survey, 2014.
- Wei Zhanyu, Chinese Earthquake Administration, 2013-2014.
- Riccardo Civico, Istituto di Geofisica i Volcanologia, Italy, 2013.
- Hyun Tae Kim, Department of Earth Environmental Sciences, Environmental and Marine Sciences and Technology, Pukyong National University, Busan 608-737, KOREA, 2011-2012.
- Laura Delgado Mendes, Assistant Professor - Federal Rural University of Rio de Janeiro - Multidisciplinary Institute and Ph.D Student - Faculty of Geology - Rio de Janeiro State University Fulbright Visiting Student 2011-2012.
- Carol Canora Catalán, Departamento de Geodinámica, Universidad Complutense de Madrid, 2008.
- Angela Landgraf, visiting Ph.D. student, Institut für Geowissenschaften, Universität Potsdam, Germany, 2007.
- Rasmus Thiede, visiting Ph.D. student, Institut für Geowissenschaften, Universität Potsdam, Germany, 2003.
- Olaf Zielke, visiting Diploma student, Institut für Geowissenschaften, Universität Potsdam, Germany, 2002.
- Fidel Martín González, visiting Ph.D. student, Departamento de Geodinámica, Facultad de Geología, Universidad Complutense de Madrid, Spain, 2002.
- Laura Colini, visiting scientist, Earthquakes and Landscape Development in the Central Appenine, Italy, Istituto Nazionale de Geofisica, Italy, 2000.

9 Service

9.1 Department/School service

- Deputy Director (2017–Present)
- Associate Director for Operations (2013–2016)
- Associate Director for Graduate Studies (2010–2013)
- Academic Program Review Committee (2010–2011)
- Annual Review Committee (2007–2009)
- Computing Committee (1996–2009)
- Geophysics Faculty Search Committees (2000, Chair 1999)
- Graduate Committee (2001, Chair 2002, 2004, 2005, 2006)
- Graduate Advisor (2003-2005)
- Associate Chairman (2003-2005)
- Geological Sciences Academic Program Review committee (2003-2004, Chair)
- Geodynamics Faculty Search Committee (2003-2004, Chair)
- Sedimentary Geology Faculty Search Committee (2004-2005, Chair)
- Remote sensing Faculty Search Committee (2011-2012)
- Geophysics Faculty Search Committee (2012-2013)

9.2 College and University service

- College of Liberal Arts and Sciences Natural Sciences Dean selection committee (2018)
- School of Earth and Space Exploration Structure and Governance subcommittee member (2004)
- Sustainable Technologies program of Center for Study of Rapidly Urbanizing Regions, Data and visualization group co-leader (2003)
- Proposition 301 Information Sciences/Information Technology committee (2002)
- Vice Provost for Research Greater Phoenix 2100 project `http://www.gp2100.org/` (2000–2005)
- Vice Provost for Research special rock varnish project (1997–1998)

9.3 Professional service

- 2016–present Centre for the Observation and Modelling of Earthquakes, Volcanoes and Tectonics Advisory Committee (http://comet.nerc.ac.uk/)
- 2015–2016 NASA Strategic planning committee member for the NASA Earth Surface and Interior (ESI) Focus Area
- 2014–present UNAVCO Nominating committee (http://www.unavco.org/community/governance/committees/committees
- 2007–2017 National Earthquake Prediction Evaluation Council (appointed by Director of US Geological Survey)

- 2011–2016 Southern California Earthquake Center Planning Committee (SoSAFE)
- 2006–present Arizona Land Subsidence Group member
- 2008–2014 Committee on Seismology and Geodynamics, a standing committee within the National Research Council's Board on Earth Sciences and Resources
- 2011–2015 EarthScope Steering Committee chairman
- 2011–2015 EarthScope National Office Director
- 2013 Palo Verde Nuclear Generating Station Seismic Hazard Review (SSHAC level 3) Resource Expert
- 2010–2013 Scientific Review Panel, Uniform California Earthquake Rupture Forecast 3
- 2010 GeoPrisms Rift Initiation and Evolution implementation plan meeting and writing team
- 2010 Margins Program Successor Planning Science Plan writing team
- 2010 Margins Program Successor Planning Workshop organizing committee
- 2010 UNAVCO Science Workshop Organizing Committee
- 2009-2010 EarthScope Speaker (`http://www.earthscope.org/speakers`)
- MARGINS/GeoPrisms Steering Committee (2009–2010)
- Guest Editor, *Geomorphology*, Special Issue on high resolution topography, publication date summer 2009.
- Earthscope Education and Outreach Steering Committee (2008–2011)
- Seismological Society of America Board of Directors Nomination Committee (2008)
- Dual bachelor of science degree in international field geosciences US Department of Education project (University of Montana, University of Potsdam, and University of Cork) external evaluator (2008–2013)
- National Center for Airborne Laser Mapping (NCALM), steering committee member (2003–2005; Chairman 2005–2006)
- Guest Editor, *Bulletin of the Seismological Society of America* Special Issue on the 2004 Parkfield Earthquake and the Parkfield Earthquake Prediction Experiment (publication date September 2006)
- Moderator: Flood Control District of Maricopa County Alluvial Fan Flood Hazard Management Symposium (April 2005)
- Workshop organizer: GEON Visualization Workshop (March, 2005)
- Convener: Geoinformatics and Geological Sciences: The Next Step (Posters), Technical session at the Geological Society of America Annual meeting, 2004.
- Workshop organizer: "Integrated studies of fault zones; LiDAR and other hi res imaging of fault systems; Information technology: enabling infrastructure" 2004 Southern California Earthquake Center
- Associate Editor, *Lithosphere* (2008–2010)
- Associate editor, *Geosphere* (`http://www.geosociety.org/pubs/geosphere/`) (2004–present)
- Associate editor, *Geology* (2002–2005)
- Associate editor, *Journal of Geodynamics* (1998–2001)
- USGS National Earthquake Hazards Reduction Program proposal review panel (1996–1998, 2001, 2002, 2013)

- National Science Foundation proposal review panelist
- Lead field trips for Arizona Hydrological Society, International Association of Landscape Ecology, Bureau of Land Management, Stanford Alumni Phoenix Chapter, NSF-Sponsored *Explosive Volcanism Workshop*
- International committees: IUGS Committee on Tectonics (COMTEC), and Subcommittee on Tectonic and Surface Processes Interaction (TASPIS) (1996–Present)
- Journal article reviewer: Journal of Geophysical Research, Geology, Geomorphology, Geosphere, Journal of Seismology, Geophysical Journal International, Basin Research, Journal of Geology, Geophysical Research Letters, Bulletin of Seismological Society of America, Annals of Geophysics
- Book reviewer: *Tectonic Geomorphology*, Burbank and Anderson, Blackwell Scientific; *The Living Landscape*, Frederick Steiner, McGraw–Hill
- Arizona state government service: ASU representative of Arizona Earthquake Information Network and member of Arizona Council for Earthquake Safety
- California state government service: external reviewer for the California Earthquake Prediction Evaluation Council (1997–2003)