

**SAN JOSE STATE UNIVERSITY DEPARTMENT OF GEOLOGY
FACULTY AND *STUDENT ACTIVITY (January – December 2013)**

PAPERS AND BOOKS PUBLISHED:

Riley, K. L., Bendick, R., Hyde, K.D., and **Gabet, E.J.**, 2013, Frequency-magnitude distribution of debris flows compiled from global data, and comparison with post-fire debris flows in the western U.S.: *Geomorphology*, v. 191, p. 118-128.

Hendricks, J.R., 2013, Global distributional dynamics of Cambrian clades as revealed by Burgess Shale-type deposits, *in* Harper, D.A.T., and Servais, T. eds, *Early Palaeozoic Palaeobiogeography and Palaeogeography*: Geological Society, London, Memoir 38, p. 33-41 (doi: [10.1144/M38.4](https://doi.org/10.1144/M38.4)).

Smith, U.E., and **Hendricks, J.R.**, 2013, Geometric morphometric character suites as phylogenetic data: extracting phylogenetic signal from gastropod shells: *Systematic Biology*, v. 62, p. 366-385. (doi: [10.1093/sysbio/syt002](https://doi.org/10.1093/sysbio/syt002))

Hendricks, J.R., 2013, Episodes from the history of paleontology and geology: elucidated using culturomics, *Evolution: This View of Life* Webpage (online only; not peer-reviewed).

- Chapter 1: <http://www.thisviewoflife.com/index.php/magazine/articles/episodes-from-the-history-of-paleontology-and-geology-elucidated-using-cult>
- Chapter 2: Most popular dinosaur ever?
<http://www.thisviewoflife.com/index.php/magazine/articles/episodes-from-the-history-of-paleontology-and-geology-chapter-two-most-popu>
- Chapter 3: What happened to the theory of geosynclines?
<http://www.thisviewoflife.com/index.php/magazine/articles/the-history-of-paleontology-and-geology-chapter-3-what-happened-to-the-theo>
- Chapter 4: The age of the earth.
<http://www.thisviewoflife.com/index.php/magazine/articles/the-history-of-paleontology-and-geology-chapter-3-the-age-of-the-earth>

Messina, P. et al., 2013, *Next Generation Science Standards: For States, By States*: Washington DC, The National Academies Press, 324 p.

Rioux, M., Bowring, S., Kelemen, P., Gordon, S., **Miller, R.B.**, and Dudas, F. 2013, Tectonic development of the Samail ophiolite: High-precision U-Pb zircon geochronology and Sm-Nd isotopic constraints on crustal growth and emplacement: *Journal of Geophysical Research*, v. 118, p. 1–17, doi:10.1002/jgrb.50139.

Paterson, S.R., Lackey, J.S., Memeti, V., **Miller, J.S.**, **Miller, R.B.**, Mundil, R., and Putirka, K.D., 2013, Field Forum Report: Formation of the Sierra Nevada batholith: Magmatic and tectonic processes and their tempos: *GSA Today*, v. 23, no. 2, p. 15-17.

GRANTS:

Hendricks, J.R., “Digitization TCN: Collaborative Research: Digitizing Fossils to Enable New Syntheses in Biogeography - Creating a PALEONICHES-TCN”, National Science Foundation (\$157,975, 7/1/2012 to 6/30/2015).

Metzger, E.P. and *Williams, D.W. (undergraduate), “Geochemical and Petrographic Investigation of Miocene Volcanic Rocks Near San Luis Reservoir, Central Diablo Range, California”, San Jose State University Undergraduate Research Grant (\$997, 7/1/13 - 6/30/14).

Cordero, E., **Metzger, E.P.**, and Walsh, E., “The Green Ninja Project”, City of San Jose - Silicon Valley Energy Watch (\$59,932, 8/1/2013 - 12/31/2014).

Miller, J. S., Collaborative Research: Supereruptions, Magma Chambers, & Plutonic Residue: Insights from Peach Spring Tuff, significance of sphene, National Science Foundation (\$150,913, August 2009-July 2013).

Miller, J. S., “Collaborative Research: Deciphering Sierran Magma Sources and Modes of Diversification Using Trace element, O, and Hf Isotopic Analyses of Zircon”, National Science Foundation (\$146,011, March 2010-February 2014).

Miller, J. S., Collaborative Research: “Tectonic Links, Magma Fluxes, and Single Mineral Geochemistry in Plutonic Systems from 5-30 km Depth, North Cascades Core, Washington”, National Science Foundation (\$171,532, June 2010-May 2014).

Miller, R.B., “Evaluating the Influence of Eocene Ridge Subduction on Magmatism, Deformation, and Basin Evolution in the Pacific NW”, National Science Foundation (\$96,000, 1/1/2012-12/31/2014).

Miller, R.B., “Structure and Construction of the Sonora Pass Intrusive Suite, Sierra Nevada, California”, U.S. Geological Survey (EDMAP) (\$11,448, 6/1/2013-5/31/2014).

Miller, R.B., “Tectonic Links, Magma Fluxes, and Single Mineral Geochemistry in Plutonic Systems From 5-30 km Depth, Cascades Core, Washington”, National Science Foundation (\$171,532, 6/1/2010–5/31/2014).

Reed, 2013, “SJSU Innovative Teaching – Course Redesign Award,” Office of Provost, SJSU Center for Faculty Development (\$4,500, 7/1/13-6/30/14).

Reed, 2013, “GEOL 112, Hazards and Risks of Earthquakes and Volcanoes Activity Workbook,” SJSU Textbook Alternative Program, (\$1,000, 7/31/13-12/31/13).

ABSTRACTS PUBLISHED WITH PRESENTATIONS:

*Short, L., and **Gabet, E.J.**, 2013, The relationship between large woody debris and a decrease of median bed material size in a gravel bed channel after post-fire debris flows: GSA Cordilleran Section Meeting, v. 45, no. 6.

Riley, K.L., Bendick, R., Hyde, K., and **Gabet, E.J.**, 2013, Frequency-magnitude distribution of non-fire-related and post-fire debris flows in the Western U.S.: First steps toward global risk prediction. AGU Chapman Conference.

Gabet E.J., Perron J.T., and Johnson, D.L., 2013, Biotic origin for Mima mounds supported by numerical model: AGU Fall Meeting EP41D-8027.

Hendricks, J.R., Portell, R.W., Lenci*, E.M., Abdollahian*, N., Lenci*, A.M., Kittle, B.A., and Roberts, S.W., 2013, The digital atlas of Neogene life: Geological Society of America Annual Meeting, Denver, v. 45, no. 7.

Hendricks, J.R., Stigall, A.L., Portell, R.W., Saupe, E.E., and Lieberman, B.S., 2013, Biogeographic responses of mollusk species to Plio-Pleistocene environmental change in the western Atlantic: Geological Society of America Abstracts with Programs, v. 45, no. 7.

Levy, M.G., Nirody, J.A., Neu, J.C., **Hendricks, J.R.**, Slatkin, M., and Oster, G.R., 2013, A neural-field model for the evolution of *Conus* shell patterns: Society of Integrative and Comparative Biology Annual Meeting, e126.

http://icb.oxfordjournals.org/content/53/suppl_1/e1.full.pdf+html

Saupe, E.E., **Hendricks, J.R.**, Portell, R.W., Dowsett, H., Haywood, A., Hunter, S., and Lieberman, B.S., 2013, Macroevolutionary consequences of profound climate change on niche evolution: an examination of marine mollusks over the past 3 million years: Geological Society of America Abstracts with Programs, v. 45, no. 7.

Wysession, M., Colson, M., Duschl, R.A., **Messina, P.**, Lopez, R., and Speranza, P., 2013, Challenges of the NGSS for future Geoscience education: American Geophysical Union, Fall Meeting Supplement, Abstracts.

Wysession, M., Colson, M., Duschl, R.A., **Messina, P.**, Lopez, R., and Speranza, P., 2013, Implications of the NGSS for future Geoscience education: Geological Society of America Abstracts with Programs, v. 45, no. 7.

Metzger, E., 2013, A model for long-term teacher professional development: reflections from twenty-three years of the Bay Area Earth Science Institute: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 795.

Metzger, E.P., Santone, S., Smith, G., and Cordero, E., 2013, A self-paced online module for teachers using climate change as a context for bringing sustainability education to the classroom: Abstract ED11A-0708, 2013 Fall Meeting, American Geophysical Union, San Francisco.

Cordero, E., **Metzger, E.P.**, and Smith, G., 2013, Promoting action on climate change through scientific storytelling and the Green Ninja Film Academy: Abstract ED13B-0771, 2013 Fall Meeting, American Geophysical Union, San Francisco.

Lackey, J.S., **Miller J.S.**, Davies, G.R., Eisenberg, J.L., and Murphy, B.S., 2013, Deconvoluting magma mixing and source characteristics of a long lived (~9 M.Y.) Sierra Nevada magmatic complex: O, Hf and Trace Elements of zircon from the John Muir Suite: Geological Society of America Abstracts with Programs. v. 45, No. 7, p. 390.

Lackey, J.S., Sendek, C., **Miller J.S.**, Murphy, B.S., Fulton, A.A., Bindeman, I.N., Economos, R., Kylander-Clark, A., and Davies, G.R., 2013, A Mojave perspective on volcanic-plutonic systems In California's Middle Jurassic arc: Geological Society of America Abstracts with Programs. v. 45, No. 7, p. 691.

*Leopold, M., *Sendek, C., Miller, R.B., **Miller, J.S.**, and *Baker, N., 2013, Field observations from the Sonora Pass Intrusive Suite: structure and construction of a Cretaceous zoned intrusive suite in the central Sierra Nevada Batholith, California: Geological Society of America Abstracts with Programs. v. 45, No. 7, p. 390.

Miller, J.S., and Lackey, J.S., 2013, Are the Late Cretaceous K-feldspar megacrystic intrusions of the Sierra Nevada Batholith cold, wet granitoids?: Geological Society of America Abstracts with Programs. v. 45, No. 7, p. 231.

*Overton, S., Frazier, W.O., McDowell, S.M., *Lidzbarski, M., **Miller, J.S.**, Miller, C.F., Fisher, C.M., Economos, R., and Davies, G.R., 2013, The evolution of the Peach Spring Tuff and Silver Creek Volcanic Center as revealed by Hf and O isotopes in zircon: Geological Society of America Abstracts with Programs, v. 45, No. 7, p. 389.

Miller, R.B., and Umhoefer, P.J., 2013, Evidence for collision of Siletzia in the central and North Cascades, Washington: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 166.

Miller, R.B., 2013, Structure of the Yosemite Valley Intrusive Suite: Regional strain fields and influence on emplacement of younger intrusions in the central Sierra Nevada batholith: Geological Society of America Abstracts with Programs, v. 45, no. 6, p. 12.

*Leopold, M., *Sendek, C., **Miller, R.B.**, **Miller, J.S.**, and *Baker, N., 2013, Field observations from the Sonora Pass Intrusive Suite: Structure and construction of a Cretaceous zoned intrusive

suite in the central Sierra Nevada batholith, California: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 390.

Sauer, K., Gordon, S., and **Miller, R.B.**, 2013, Sediment incorporation into arc systems: A detrital zircon study: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 812.

*Buerer, B., and **Miller, R.**, 2013, Foliation development and intrusive relationships in the Cretaceous Wrights Lake and Jurassic Pyramid Peak plutons of the northern Sierra Nevada batholith, Desolation Wilderness, California: Geological Society of America Abstracts with Programs, v. 45, no. 6, p. 12.

*Dustin, K.N., and **Miller, R.B.**, 2013, Construction and relationships of mafic and tonalitic rocks in the Seven Fingered Jack pluton, North Cascades, Washington: Geological Society of America Abstracts with Programs, v. 45, no. 6, p. 12.

*Elkins, S.W., and **Miller, R.**, 2013, Structure and construction of the highly elongate, Cretaceous Seven-Fingered Jack pluton in the Devil's Smokestack area, North Cascades, Washington: Geological Society of America Abstracts with Programs, v. 45, no. 6, p. 12.

Shea, E.K., Bowring, S.A., **Miller, R.B.**, and **Miller, J.S.**, 2013, Magmatism at different crustal levels in the ancient North Cascades magmatic arc: Abstract V13E-2656, 2013 Fall Meeting, AGU, San Francisco.

Reed, D.L., 2013, Online teaching and learning in oceanography: A look back at 15 years of undergraduate general education: 2013 Fall Meeting, American Geophysical Union, San Francisco, CA, Abstract ED23E-07 (Invited).

*Treece, B., Catchings, R., **Reed, D.** and Goldman, M., 2013, Seismic imaging of a slope stability mitigation project at Newby Island Sanitary Landfill, San Jose, California: 2013 Fall Meeting Program, American Geophysical Union, San Francisco, CA, Abstract NS33A-1692.

TECHNICAL ORAL PRESENTATIONS (No Published Abstracts):

Hendricks, J.R., May 2013, "Digitization, diverse data, and deadly snails: revealing the ancient history of a hyperdiverse molluscan clade," American Museum of Natural History, New York, New York (invited presentation).

Messina, P. April 2013 and November 2013, "Next Generation Science Standards Workshops for Teachers," SJSU Martin Luther King, Jr. Library, >150 participants from regional schools.

Metzger, E.P., October 2013, “Improving climate literacy with new media and the Green Ninja”, 42nd Annual Meeting of the North American Association of Environmental Education, Baltimore, Maryland.

Metzger, E.P., October 2013, “Teacher education for sustainability: examples from San José State University”, 42nd Annual Meeting of the North American Association of Environmental Education, Baltimore, Maryland.

Miller J.S., March 2013, Probing zircon for insights into the growth and evolution of Miocene magma systems in southern Nevada, San Jose State Geology Club (invited presentation)

Reed, D.L., December 2013, “GEOL 112 – Course Redesign Using Canvas, Panel Member: High touch, high tech, high impact” Teaching and Learning Conference,” SJSU Center for Faculty Development, SJSU King Library (invited presentation).

Reed, D.L., June 2013, “Online teaching and learning in oceanography,” NSF-NAGT On the Cutting Edge workshop on Teaching Oceanography, San Francisco, CA, (invited presentation).

PROFESSIONAL REVIEWS:

Gabet, E.J., Served as Associate Editor for the Journal of Geophysical Research – Earth Surface. Handled ~12 papers.

Hendricks, J.R., 2013, three peer reviews (one book for University of Chicago Press and two articles for edited volumes).

Miller, J.S., Journal Review
Earth and Planetary Science Letters
Geosphere

Miller, J.S., Peer review of National Science Foundation Proposals (2)

Miller, R.B., 2013, Peer Reviewer
Geological Society of America Bulletin
Geology
Geosphere
Lithos
National Science Foundation
Tectonophysics

Reed, D.L., 2013, Peer review of National Science Foundation proposals (2).

Reed, D.L., 2013, Judge for the GeoPRISMS Best Student Paper Award, 2013 Fall Meeting Program, American Geophysical Union, San Francisco, CA.

MISCELLANEOUS ACTIVITIES – AWARDS, CONSULTING ACTIVITIES, MEDIA PUBLICATIONS, SPECIAL STUDIES, TRAVEL:

Andersen, D.W., January-December 2013, Ongoing documentation of fossil occurrences in outcrops, trenches, and boreholes in the Santa Clara Formation; collaboration with US Geological Survey, San Francisco Public Utilities Commission, and CSU East Bay.

Gabet, E.J. , 2013, Travelled to Scotland to do research for a book he is writing.

Hendricks, J.R., May 2013, Online (Google Hangout) presentation on trilobites for 4th grade students at Glenbrook Elementary School, Pulaski, Wisconsin.

Messina, P., April and November 2013, Geoscience representative of the College Board's Science Academic Advisory Council, New York, NY.

Messina, P., December 2013, Fall Meeting, American Geophysical Union, San Francisco, CA.

Messina, P., October 2013, Annual Meeting, Geological Society of America, Denver, CO.

Messina, P., September – December 2013, Achieve, Inc., Washington, D.C. Worked in committee toward compiling metadata and evidence statements for the *Next Generation Science Standards*.

Metzger, E.P., April 2013, Pacific Section American Association of Petroleum Geologists Distinguished Educator Award.

Metzger, E.P. (with **Hendricks, J.** and **Teruya, L.**, of the Geology Department, and SJSU faculty from the departments of Meteorology and Climate Science, Elementary Education, Biological Sciences and Astronomy and Physics), January-November, 2013: the Bay Area Earth Science Institute presented six full-day interdisciplinary Saturday workshops that addressed earth and environmental science topics; each session served 15-25 teachers.

Metzger, E. (with Cordero, E., Smith, G., and others), two multi-day climate change education workshops for middle and high school teachers.

Metzger, E., and Cordero, E., March 2013: "Energy Detectives", a hands-on workshop for ~ 130 middle school students attending MESA (Mathematics Engineering Science Achievement) Day at San Jose State University.

Miller, J. S., April 2013, Lab research, Vrije University, Department of Petrology, laser ablation MC-ICP-MS facility, Amsterdam Netherlands.

Miller, J. S., May 2013, Geological Society of America Cordilleran Section Meeting, Fresno, CA

Miller, J. S., October 2013, Geological Society of America Annual Meeting, Denver, CO.

Miller, R.B., November 2013, Ph.D. thesis defense at MIT; served as member of the thesis committee.

Miller, R.B., October 2013, Co-Convenor for session entitled “Rates and thermomechanical characteristics of processes controlling the rheologic evolution of arc systems” for annual Geological Society of America Meeting in Denver.

Miller, R.B., June - September 2013, Conducted field research for 7 weeks in Washington Cascades and Sierra Nevada with 4 M.S. students, 1 B.S. student, and colleagues from MIT, Northern Arizona University, Oregon State University, and the University of Southern California.

Oberdorfer, J.A. January – June 2013, Expert Witness for the U.S. Department of Justice in the Antelope Valley Groundwater Cases.

Oberdorfer, J.A., January – August 2013, Provide hydrogeologic interpretation of phosphate mine impacts to groundwater in southeastern Idaho, AECOM, Sacramento, CA.

Oberdorfer, J.A., June – August 2013, Numerical simulation of Facebook expansion site in Redwood City, CA, Cornerstone Environmental, Mountain View, CA.

Reed, D.L., 2013, GEOL 112, Hazards and Risks of Earthquakes and Volcanoes Activity Workbook, SJSU Textbook Alternative Program, version 1 at http://oceansjsu.com/112/activity_workbook_GEOL_112_f13.pdf; 137 p.

Reed, D.L., 2013, Six courses taught in Winter Intersession, Summer Session and Fall 2013 Spartans Online Special Session (Total Revenue to SJSU - \$129,117).

Reed, D.L., December 2013, Fall Meeting, American Geophysical Union, San Francisco, CA.

Reed, D.L., June 2013, NSF-NAGT On the Cutting Edge Workshop on Teaching Oceanography, San Francisco, CA.

Reed, D.L., April 2013, COAST Annual Meeting, CSU Office of Chancellor, Long Beach, CA.

Reed, D.L., April 2013, EarthCube Education End User Workshop, Scripps Institution of Oceanography, La Jolla, CA.