

• **Joel Lawrence Pederson** •

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<http://www.usu.edu/geol/pederson>

• **research interests**

i) landscape evolution of Interior West; ii) geomorphology of drylands; iii) application of OSL geochronology

• **education**

<u>University of New Mexico</u> Albuquerque, NM	Ph.D. in Earth and Planetary Sciences, 1999: A long-term record of climate-controlled hillslope sedimentation.
<u>Northern Arizona University</u> Flagstaff, AZ	M.S. in Geology, 1995: Late Holocene geochronology and paleoclimate of Lake Canyon, Utah.
<u>Gustavus Adolphus College</u> St. Peter, MN	B.A. in Geology, 1990, magna cum laude, Thesis: Terraces of River Warren

• **professional experience**

<u>2014-</u>	Professor	Department of Geology, Utah State University
	Department Head (2016-)	
<u>2005-2014</u>	Associate Professor	
	Graduate Director (2010-2015)	
	Undergrad Director (2007-2010)	
<u>1999-2005</u>	Assistant Professor	
<u>1996-2004</u>	Contract Mapping	New Mexico Bureau of Mines and Geology
<u>1990-1992</u>	Geologist	STS Environmental Consultants, Minneapolis, MN

• **select recent grants**

<u>2013-2016</u>	NSF-TUES	“Development of mobile games for geoscience education using the Colorado Plateau as a virtual classroom” with Brett Shelton, Andrew Walker, and Natalie Bursztyn	\$240,737
<u>2007-2011</u>	U.S. Bureau of Reclamation	“The Grand Canyon Geoarchaeological Project”	\$1,225,000
<u>2008-2011</u>	NSF-IF	“Technician Support: New USU Luminescence Geochronology Laboratory” with Tammy Rittenour	\$183,000
<u>2005-2007</u>	U.S. Bureau of Reclamation	“Development of a treatment plan for selected cultural properties along the Colorado River in Grand Canyon”	\$500,000

• **recent peer-reviewed publications** (*Pederson students in italics*)

- Google Scholar site: <http://scholar.google.co.uk/citations?user=ZytbQ6c4444A>

Bursztyn N., Walker, A, Shelton, B. and Pederson, J.L., 2017, Increasing undergraduate interest to learn geoscience with GPS-based, augmented reality field trips on students' own smartphones: *GSA Today*: v. 27, no. 6, p. 4-10, doi: 10.1130/GSATG304A.1

Bursztyn N., Walker, A, Shelton, B. and Pederson, J.L., 2017, Assessment of student learning using augmented reality Grand Canyon field trips for mobile smart-devices: *Geosphere*, v. 13, no. 2, p. 260-268, doi: 10.1130/GES01404.1

Pederson, J.L., Janecke, S.U., Reheis, M.C., Kaufman, D.S. and Oaks, R.Q., Jr., 2016, Chapter 2. The Bear River's history and diversion—constraints, unsolved problems, and implications for the Lake Bonneville record, *in* Oviatt, C.G. and Shroder Jr., J.F., eds., *Lake Bonneville: A Scientific Update*: Elsevier, p. 28-58.

Bursztyn N., Pederson, J.L., *Tressler C.*, *Mackley R.D.*, and *Mitchell K.J.*, 2015, Rock strength along a fluvial transect of the Colorado Plateau—quantifying a fundamental control on geomorphology: *Earth and Planetary Science Letters*, v. 429, p. 90-100, doi:10.1016/j.epsl.2015.07.042

Gallen, S.F., Pazzaglia, F.J., Wegmann, K.W., Pederson, J.L. and Gardner, T.W., 2015, The dynamic reference frame of rivers and apparent transience in incision rates: *Geology*: v. 43, p. 623-626, doi: 10.1130/G36692.1

Jochems, A.P. and Pederson, J.L., 2015, Active salt deformation and rapid, transient incision along the Colorado River near Moab, Utah: *Journal of Geophysical Research (Earth Surface)*, v. 120, no. 4, p. 730-744, doi: 10.1002/2014JF003169

Bursztyn N., Pederson, J.L., Shelton, B., Campbell, T. and Walker, A., 2015, Utilizing geo-referenced mobile game technology for universally accessible virtual geology field trips: *International Journal of Education in Mathematics, Science and Technology*: v. 3, no. 2, p. 93-100.

Pederson, J.L. and O'Brien, G.R., 2014, Patterns in the landscape and erosion of cultural sites along the Colorado River corridor in Grand Canyon, USA: *Geoarchaeology*, v. 29, p. 431-447.

Pederson, J.L., *Chapot, M.S.*, Simms, S.R., Sohbaty, R., Rittenour, T.M., Murray, A.S., and Cox, G., 2014, Age of Barrier Canyon rock art constrained by cross-cutting relations and luminescence dating techniques: *Proc. Nat. Acad. Sci.*, v. 111, no. 36, p. 12986-12991, doi:10.1073/pnas.1205402111

Pederson, J.L., Burnside, N., Shipton, Z., and Rittenour, T.M., 2013, Rapid river incision across an inactive fault—Implications for patterns of erosion and deformation in the central Colorado Plateau: *Lithosphere*, v. 5, p. 513-520, doi:10.1130/L282.1

Pederson, J.L., *Cragun, W.S.*, *Hidy, A.J.*, Rittenour, T.M., and Gosse, J.C., 2013, Colorado River chronostratigraphy at Lee's Ferry, Arizona and the central Colorado Plateau bull's-eye of incision: *Geology*, v. 41, p. 427-430, doi:10.1130/G34051.1

Lee, J.P., Stockli, D.F., Kelley, S.A., Pederson, J.L., Karlstrom, K.E., and Ehlers, T.A., 2013, New thermochronometric constraints on the Tertiary landscape evolution of central and eastern Grand Canyon, Arizona: *Geosphere*, v. 9, no. 2, doi:10.1130/GES00842.1