

## Curriculum Vitae for Jon D. Pelletier

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### Education

1997 Ph.D., Geological Sciences, Cornell University, Ithaca, NY  
Research advisor: Donald L. Turcotte  
1992 B.S. with honors, Physics, California Institute of Technology, Pasadena, CA  
Research advisor: Thomas A. Tombrello

### Employment

2010-present Professor, Geosciences Department, University of Arizona  
2005-2010 Associate Professor, Geosciences Department, University of Arizona  
1999-2005 Assistant Professor, Geosciences Department, University of Arizona  
1997-1999 O.K. Earl Prize Postdoctoral Scholar, California Institute of Technology  
1995-1997 Graduate Research Assistant, Geosciences Department, Cornell University  
1993-1995 Graduate Teaching Assistant, Physics Department, Cornell University  
1992-1993 Research Scientist, Nuclear Physics Department, Schlumberger-Doll Research

### Additional Professional Activities and Affiliations

2014-present Associate editor, AGU journal *Journal of Geophysical Research – Earth Surface*  
2012-present Associate editor, GSA journal *Geological Society of America Bulletin*  
2005-present Associate editor, Elsevier journal *Geomorphology*  
2008-2012 Coeditor, GSA journal *Lithosphere*  
2007-present Adjunct faculty member, Planetary Sciences Department, University of Arizona.  
2004-2007 Consulting geomorphologist, Yucca Mountain Project, Department of Energy.  
2002-present Affiliate faculty member, Applied Mathematics Program, University of Arizona  
2001-present Affiliate faculty member, Institute for the Study of Planet Earth, University of Arizona

### Honors/Awards

2015 Geological Society of America Fellow  
2011 Galileo Circle Fellow, College of Science, University of Arizona

### Brief synopsis of research expertise

The primary goal of my research is to combine field measurements, analyses of digital data, and mathematical modeling to understand landform evolution. My work includes all major landform types (hillslope, fluvial, aeolian, glacial, coastal) and spans a wide range of spatial and temporal scales from microtopographic ( $\sim 10^{-3}$  m) to global ( $\sim 10^7$  m) and time scales of individual events (e.g. rainstorms, i.e.  $\sim 10^{-4}$  y) to mountain building and decay ( $10^8$  y).

## Books

Pelletier, J.D. (2008), *Quantitative Modeling of Earth Surface Processes*, Cambridge University Press.

## Publications

- Williams, Z., J.D. Pelletier, and T. Meixner (2019), Self-affine fractal spatial and temporal variability of the San Pedro River, southern Arizona, *Journal of Geophysical Research, Earth Surface*, doi: 10.1029/2018JF004853.
- Reinfelder Y.F., et al. (2019), Hillslope hydrology in global change research and Earth system modeling, *Water Resources Research*, doi: 10.1029/2018WR023903
- Chang, L.-L., Dwivedi, R., Knowles, J. F., Fang, Y.-H., Niu, G.-Y., Pelletier, J. D., et al. (2018). Why do large-scale land surface models produce a low ratio of transpiration to evapotranspiration? *Journal of Geophysical Research: Atmospheres*, 123. doi: 10.1029/2018JD029159
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- Perdrial, J., P. Brooks, T. Swetnam, K. Lohse, C. Rasmussen, M. Litvak, A. Harpold, X. Zapata-Rios, P. Broxton, B. Mitra, T. Meixner, K. Condon, D. Huckle, C. Stielstra, A. Vazquez-Ortega, R. Lybrand, M. Holleran, C. Orem, J.D. Pelletier, and J. Chorover (2018), A net ecosystem carbon budget for snow dominated forested headwater catchments: linking water and carbon fluxes to critical zone carbon storage, *Biochemistry*, 138(3), 225-243, doi: 10.1007/s10533-018-0440-3.
- Luo, W., T.D. Smith, K. Whalley, A. Darling, C. Ormand, W.-C. Hung, J.-L. Chiang, J.D. Pelletier K. Duffin, *Earth surface modeling for education: How effective is it? Four semesters of classroom tests with WLSIM-GC*, *British J. Educ. Tech.*, doi: 10.1111/bjet.12653
- Field, J.P., J.D. Pelletier (2018), Controls on the aerodynamic roughness length and the grain-size dependence of aeolian sediment transport, *Earth Surface Processes and Landforms*, 43(12), 2616-2626, doi: 10.1002/esp.4420.
- Pelletier, J.D., P.A. Kapp, J. Abell, J.P. Field, Z.C. Williams, R.J. Dorsey (2018), Controls on yardang development and morphology I. Field observations and measurements at Ocotillo Wells, California, *Journal of Geophysical Research, Earth Surface*, 123(4), 694-722, doi: 10.1002/2017JF004461
- Pelletier, J.D. (2018), Controls on yardang development and morphology II. Numerical Modeling, California, *Journal of Geophysical Research, Earth Surface*, 123(4), 723-743, doi: 10.1002/2017JF004462
- Pelletier, J.D., G.A. Barron-Gafford, H. Gutierrez-Jurado, E.S. Hinckley, E. Istanbuluoglu, L.A. McGuire, G.-Y. Niu, M.J. Poulos, C. Rasmussen, P. Richardson, T.L. Swetnam, G.E. Tucker (2018), Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks, *Earth Surface Processes and Landforms*, 43(5), 1133-1154, doi:10.1002/esp.4306.
- Campisano, C.J., A.S. Cohen, J.R. Arrowsmith, A. Asrat, A.K. Behrensmeier, E.T. Brown, A.L. Deino, D.M. Deocampo, C.S. Feibel, J.D. Kingston, H.F. Lamb, T.K. Lowenstein, A. Noren, D.O. Olago, R.B. Owen, J.D. Pelletier, R. Potts, K.E. Reed, R.W. Renaut, J.M. Russell, J.L., F. Schabitz, J.R. Stone, M.H. Trauth, and J.G. Wynn (2017), The Hominin Sites and Paleolakes Drilling Project: High-resolution paleoclimate records from the East African rift

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- Pelletier, J.D. (2017), Quantifying the controls on potential soil production rates: a case study of the San Gabriel Mountains, California, *Earth Surface Dynamics*, 5, 479–492.
- McIntosh, J.C., C. Schaumberg, J. Perdrual, A. Harpold, A. Vázquez-Ortega, C. Rasmussen, D. Vinson, X. Zapata-Rios, P.D. Brooks, T. Meixner, J.D. Pelletier, L. Derry, J. Chorover (2017), Geochemical evolution of the Critical Zone across variable time scales informs concentration-discharge relationships: Jemez River Basin Critical Zone Observatory, *Water Resources Research*, 53, doi:10.1002/2016WR019712.
- Rasmussen, C., L.A. McGuire, P. Dhakal, and J.D. Pelletier (2017), Coevolution of soil and topography across a semiarid cinder cone chronosequence, *Catena*, 156, 338–352, doi: 10.1016/j.catena.2017.04.025.
- Shepard, C., M.G., Schaap, J.D. Pelletier, and C. Rasmussen (2017), A probabilistic approach to quantifying soil property change through time integration of energy and mass input, *Soil*, doi:10.5194/soil-2016-63.
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- Olyphant, J., J.D. Pelletier, and R. Johnson (2016), Topographic correlations with soil and regolith thickness from shallow-seismic refraction constraints across upland hillslopes in the Valles Caldera, New Mexico. *Earth Surface Processes and Landforms*, 41, 1684–1696, doi: 10.1002/esp.3941.
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- Pelletier, J.D. and J.P. Field (2016), Predicting the roughness length of turbulent flows over landscapes with multi-scale microtopography, *Earth Surface Dynamics*, 4, 391–405, doi:10.5194/esurf-4-391-2016.
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- McGuire, L.A., J.D. Pelletier, and J.J. Roering (2014), Development of topographic asymmetry: Insights from dated cinder cones in the western United States, *Journal of Geophysical Research Earth Surface*, 119, 1725–1750, doi:10.1002/2014JF003081.
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