

Joel S. Scheingross

Postdoctoral Scientist

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Section 5.1: Geomorphology

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Professional Experience

Postdoctoral Scientist, GFZ – German Research Centre for Geosciences, Potsdam, Germany, November 2017 – Present

Alexander von Humboldt Postdoctoral Fellow, GFZ – German Research Centre for Geosciences, Potsdam, Germany, November 2015 – October 2017

Research / Teaching Assistant, California Institute of Technology, September 2009 – October 2015

Junior Specialist, University of California, Berkeley, July 2007 – June 2009

Education

PhD, Geology, California Institute of Technology, Adviser: Michael Lamb, 2015

M.S., Geology, California Institute of Technology, 2012.

B.A., Geology, University of California, Berkeley, 2007.

B.S., Environmental Science, University of California, Berkeley, 2007.

Peer-reviewed publications (*indicates advised high school or undergraduate student)

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Google Scholar: <https://scholar.google.com/citations?user=7fF063EAAA&hl=en>

In Review and Revision

Scheingross, J.S., M.P. Lamb, and B. Fuller, *submitted*, Self-formed bedrock waterfalls

In Press and Print

(PDFs available at <http://joelscheingross.com/publications/>)

11. **Scheingross, J.S.**, and M.P. Lamb, in press, A mechanistic model of waterfall plunge-pool erosion into bedrock, *JGR – Earth Surface*, doi: 10.1002/2017JF004195.
10. **Scheingross, J.S.**, *Lo, D.Y., and M.P. Lamb, 2017, Self-formed waterfall plunge pools in homogeneous rock, *Geophysical Research Letters*, V. 44:1, p. 200-208, doi: 10.1002/2016GL071730.
9. **Scheingross, J.S.** and M.P. Lamb, 2016, Sediment transport through self-adjusting, bedrock-walled waterfall plunge pools, *JGR-Earth Surface*, V. 121, p. 939-963, doi: 10.1002/2015JF003620.
8. Lamb, M.P., Finnegan, N.J., **Scheingross, J.S.**, and Sklar, L.S., 2015, New insight into the mechanics of fluvial bedrock erosion through flume experiments and theory, *Geomorphology*, V. 244, p. 33-55, doi: 10.1016/j.geomorph.2015.03.003.
7. **Scheingross, J.S.**, Brun, F., *Lo, D.Y., *Omerdin, K., and M.P. Lamb, 2014, Experimental evidence for fluvial bedrock incision by suspended and bed-load sediment, *Geology*, V. 42, no. 6, p. 523-526, doi:10.1130/G35432.1.
6. Mackey, B.H., **Scheingross, J.S.**, Lamb, M.P., and K.A. Farley, 2014, Knickpoint formation, rapid propagation, and landscape response following coastal cliff retreat at last-interglacial sea-level highstand: Kaua'i, Hawaii, *GSA Bulletin*, V.126, no.7/8, p. 925-942, doi:10.1130/B30930.1.
5. DiBiase, R.A., Limaye, A.B., **Scheingross, J.S.**, Fischer, W.W. and Lamb, M.P., 2013, Deltaic deposits at Aeolis Dorsa: Sedimentary evidence for a standing body of water on the northern plains of Mars, *JGR - Planets*, V. 118, Issue 6, pg. 1285-1308, doi: 10.1002/jgre.20100.
4. **Scheingross, J.S.**, Winchell, E.W., Lamb, M.P., and W.E. Dietrich, 2013, Influence of bed patchiness, slope, grain hiding, and form drag on gravel mobilization in very steep streams, *JGR – Earth Surface*, V. 118, Issue 2, p. 982-1001, doi: 10.1002/jgrf.20067.
3. **Scheingross, J.S.**, Minchew, B.M., Mackey, B.H., Simons, M., Lamb, M.P., and S. Hensley, 2013, Fault-zone controls on the spatial distribution of slow-moving landslides, *GSA Bulletin*, V. 125, no. 3/4, p. 473–489; doi: 10.1130/B30719.1.

2. Lamb, M.P., **Scheingross, J.S.**, Swanson, E., Amidon, W., Limaye, A., 2011, A model for post-fire sediment flux by dry ravel in steep landscapes. *JGR - Earth Surface*, V. 116, Issue F3, doi: 10.1029/2010JG001878.
1. Hurst, T.P., Cooper, D.W., **Scheingross, J.S.**, Seale, E.M., Laurel, B.J., and M.L. Spencer. 2009. Effects of ontogeny, temperature, and light on vertical movements of larval Pacific cod (*Gadus macrocephalus*). *Fisheries Oceanography*, 18, 5, p. 301-311 doi:10.1111/j.1365-2419.2009.00512.x.

Other publications

- Scheingross, J.S.**, 2015, Mechanics of sediment transport and bedrock erosion in steep landscapes, Ph.D. dissertation, California Institute of Technology, Pasadena, California.
- Scheingross, J.S.**, 2007. Predicting species distribution of Sierra Nevada butterflies in response to climate change. Senior Thesis, University of California, Berkeley.

Awards and honors

- Alexander von Humboldt Postdoctoral Fellow (2015 – 2017)
- Outstanding Student Presentation Award, AGU Fall Meeting (2013)
- National Science Foundation Graduate Research Fellowship Program recipient (2011-2014)
- National Center for Airborne Laser Mapping (NCALM) seed grant recipient (2010)
- UC Berkeley, Earth and Planetary Science Department Citation (2007)
- Charles H. Ramsden Research Fellow, UC Berkeley (2007)
- NSF Research Experience for Undergraduates Fellow, Oregon State University (2006)

Teaching Experience

- Guest Lecturer, 6th Grade Earth Sciences, McKinley Middle School (2010- 2015)
- Teaching Assistant, California Institute of Technology (2010 – 2014):
 - Ge 1: Earth and Environment (introductory course for non-majors)
 - Ge 121: Advance Field Geology (field methods in geology and geomorphology)
 - Ge 125: Geomorphology (introduction to geomorphology)
 - Ge 136: Regional Field Geology of the Southwestern United States (extended weekend field trips)

Undergraduate and high school student supervision

- Winter 2018: Ramona Schneider (University of Bonn), Silicate weathering laboratory flume experiments.
- Spring 2017: Toni Schmidt (University of Potsdam), Oxidation of organic carbon in laboratory flume experiments.
- Summer 2016 - Present: Nina Golombek (University of Potsdam), Organic carbon transport in the Rio Bermejo, Argentina.
- Summer 2014: Juliane Preimesberger (Caltech), Bedrock erosion in steep mountain streams.
- Summer 2013: Gheorghe Schreiber (Los Angeles Center for Enriched Studies), Influence of mixed grain size distributions on bedrock incision rates.
- 2012-2013: Khadijah Omerdin (Westridge High School), Erosion of bedrock by suspended sediment.
- Summer 2012: Daniel Lo (Caltech), Polyurethane foam as a bedrock simulant in laboratory erosion experiments.
- Summers 2010 and 2011: Conor O'Toole (Bowdoin College), Erosion of waterfall plunge pools.

Synergistic and professional activities

- Session convener, European Geosciences Union General Assembly (2016 - 2017)
- Session convener, American Geophysical Union Fall Meeting (2014 - 2017)
- American Geophysical Union Earth and Planetary Surfaces Processes focus group social media coordinator (2017 – present)
- Organizer for Caltech Geoclub seminar series (academic year 2011/2012, summer 2014)
- Organizer for American Geophysical Union Earth and Planetary Surface Processes Focus Group “Young Geomorphologist Night” (2013-2014)
- Caltech *Science Saturday* public outreach lecture (2011)
- Reviewer for *Earth Surface Dynamics*, *Earth Surface Processes and Landforms*, *Geology*, *Geophysical Research Letters*, *GSA Bulletin*, and *JGR– Earth Surface*
- Member, American Geophysical Union (2008 – present)
- Member, European Geosciences Union (2016 – present)
- Member, Geochemical Society (2017 – present)

Invited seminars

2018: University Nevada Reno

2017: Université Rennes, Universität Tübingen, UC Berkeley, UC Santa Barbara, UC Riverside

2016: Dartmouth College, Imperial College London, Université Grenoble Alpes, University of Edinburgh

2015: Ben-Gurion University of the Negev, University of Potsdam

2014: GFZ German Research Center for Geosciences, University of Southern California

2013: NASA Jet Propulsion Laboratory

Select first-authored conference abstracts and proceedings

Scheingross, J.S., Dellinger, M., Eglinton, T., Fuchs, M., Golombek, N., Hilton, R.G., Hovius, N., Lupker, M., Repasch, M., Sachse, D., Turowski, J.M., Veith-Hillebrand, A., and H. Wittmann, 2017, Insights into organic carbon oxidation potential during fluvial transport from laboratory and field experiments, *Goldschmidt 2017 Abstract*.

Scheingross, J.S., Lamb, M.P., and B.M. Fuller, 2015, Autocyclic formation, retreat, and destruction of waterfalls in an experimental bedrock channel, *EOS Trans. AGU*, EP13C-01.

Scheingross, J.S., and M.P. Lamb., 2014, Controls on filling and evacuation of sediment in waterfall plunge pools, *EOS Trans. AGU*, EP31D-3586.

Scheingross, J.S., Brun, F., *Lo, D.Y., *Omerdin, K., and M.P. Lamb., 2013, Experimental evidence for bedrock erosion by suspended sediment, *EOS Trans. AGU*, EP33C-0913.

Scheingross, J.S., Minchew, B.M., Mackey, B.H., Simons, M., Lamb, M.P., Hensley, S., 2012, The influence of large-magnitude earthquakes and fault zone damage on the spatial distribution of slow-moving landslides, *EOS Trans. AGU*, EP44A-01.

Scheingross, J.S., Winchell, E.W., Lamb, M.P., and W.E. Dietrich, 2010. Micro-topography controls on incipient motion in very steep, ephemeral streams, *EOS Trans. AGU*, EP31A-072

Scheingross, J.S., Willenbring, J.K., and W.E. Dietrich, 2008. Erosion Rates and Debris Flow History Reconstruction: a Comparison of Carbon and Cosmogenic Nuclide Dating Techniques, *EOS Trans. AGU*, H51D-0852.

Scheingross, J.S., S.D. Schoville, and G.K. Roderick. 2007. The use of species distribution models in determining areas of conservation and measuring the effects of climate change on alpine butterflies. Presented at 92nd annual meeting of Ecological Society of America, August 5 - 10, 2007, San Jose, CA, USA. (Abstract-ESA2007).