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EDUCATION

Ph.D. (2009) Environmental Science, Policy, & Management, University of California, Berkeley
Dissertation: *Soil formation and transport processes on hillslopes along a precipitation gradient in the Atacama Desert, Chile*, Advisor: Ron Amundson

B.Sc. (2000) Geological Sciences, Brown University, Providence, RI.
Senior thesis: *1,200-year record of hurricane overwash deposits in a marsh in Little Sippewisset Massachusetts.*

PROFESSIONAL EMPLOYMENT

2011-present	**Postdoctoral Researcher**, Environmental Science, University of California, Berkeley
2011	**Adjunct Professor**, Environmental Science, University of San Francisco
2010	**Lecturer,** Soil Science, University of California, Berkeley
2006, 2007	**Graduate Student Instructor,** University of California, Berkeley
2006-2009	**Lab Manager**, Amundson Lab, University of California, Berkeley
2001-2002	**Staff Assistant Geologist**, Roux Associates, Inc., Burlington, MA
2000	**Field Geologist**, Parsons Engineering-Science, Canton, MA

AWARDS AND FELLOWSHIPS

2008	James P. Bennet Agricultural Fellowship (UCB ESPM Dept. fellowship)
2006	Summer Institute for Preparing Future Faculty, UC Berkeley
2005	Institute for Geophysics and Planetary Physics Grant, Lawrence Livermore National Lab
2005	NASA Graduate Student Research Program Fellowship
2003	Sigma Xi Berkeley Chapter Grant-in-Aid

PUBLICATIONS

Owen, J.J., W.L. Silver. 2014. Greenhouse gas emissions from dairy manure management: a review of field-based studies. Global Change Biology. doi: 10.1111/gcb.12687.

Owen, J.J., E. Kebreab, W.E. Silver. 2014. Greenhouse gas mitigation opportunities for California agriculture: Review of emissions and mitigation potential of animal manure management and land application of manure. NI GGMOCA R6. Durham, NC: Duke University. (commissioned report for the California Air Resources Board).

DeLonge, M., **J.J. Owen**, W.E. Silver. 2014. Greenhouse gas mitigation opportunities for California agriculture: Review of California rangeland emissions and mitigation potential. NI GGMOCA R4. Durham, NC: Duke University. (commissioned report for the California Air Resources Board).

Owen, J.J., W.E. Dietrich, K. Nishiizumi, G. Chong, R. Amundson. 2013. The zebra stripes of the Atacama Desert: Fossil evidence of overland flow. Geomorphology 182: 157-172. doi: 10.1016/j.geomorph.2012.11.006

Owen, J.J. 2013. Hillslope processes in arid environments. *In* Treatise on Geomorphology, Vol. 7: Mountain and Hillslope Geomorphology, Shroder, J.F. (ed. in chief), Marston, R.A., and Stoffel, M. (vol. eds.) San Diego: Academic Press, p. 363-374. (**invited review**)

Amundson, R., W. Dietrich, D. Bellugi, S. Ewing, K. Nishiizumi, G. Chong, **J. Owen**, R. Finkel, A. Heimsath, B. Stewart, M. Caffee. 2012. Geomorphologic evidence for the late Pliocene onset of hyperaridity in the Atacama Desert. GSA Bulletin. doi: 10.1130/B30445.1

Owen, J.J., W.E. Dietrich, K. Nishiizumi, B. Sutter, G. Chong, R. Amundson. 2011. The sensitivity of soil production from bedrock to precipitation**.** Earth Surface Processes and Landforms. doi: 10.1002/esp.2083

Amundson, R., S. Ewing, W. Dietrich, B. Sutter, **J. Owen**, O. Chadwick, K. Nishiizumi, M. Walvoord, C. McKay. 2008. On the in situ aqueous alteration of soils on Mars. Geochimica et Cosmochimica Acta 72(15): 3845-3864. doi:10.1016/j.gca.2008.04.038

Ewing, S.A., B. Sutter, **J. Owen**, K. Nishiizumi, W. Sharp, S.S. Cliff, K. Perry, W. Dietrich, C.P. McKay, R. Amundson. 2006. A threshold in soil formation at Earth's arid-hyperarid transition. Geochimica et Cosmochimica Acta 70(21): 5293-5322. doi:10.1016/j.gca.2006.08.020

PAPERS IN PREPARATION

Amundson, R., A.M. Heimsath, **J.J. Owen,** K. Yoo, W.E. Dietrich. *accepted pending revision*. Hillslope soils and life. Geomorphology.

Owen, J.J., M. Hartmann, W.J. Parton, W.L. Silver. Long-term impacts of manure amendments on carbon and greenhouse gas dynamics of grasslands. For submission to Ecological Applications.

Owen, J.J., W.L. Silver. Moisture and temperature sensitivity of greenhouse gas emissions from dairy sources. For submission to Ecosystems.

Owen, J.J., W.L. Silver. Oxygen and temperature variations in a solid manure pile in response to pile mixing. For submission to Soil Biology and Biogeochemistry.

Owen, J.J., K. Yoo, K. Nishiizumi, G. Chong, R. Amundson. Precipitation-driven changes in physical erosion processes and rates on hillslopes in the Atacama Desert, Chile. For submission to Geological Society of America Bulletin.

PRESENTATIONS (first-authored only, *invited)

Owen, J.J., Parton, W.J., Hartman, M., Silver, W.L. 2014. Insights into the carbon sequestration potential of rangelands through measurement and modeling of differently managed pastures. American Geophysical Union Fall Meeting.

***Owen, J.J.** 2014. Global analysis of greenhouse gas emissions from dairy manure management. Brownbag seminar: Research at the Climate Science Department, Lawrence Berkeley National Lab.

Owen, J.J., W.L. Silver. 2014. Are greenhouse gas emissions from dairy manure management currently underestimated? Ecological Society of America 99th Annual Meeting.

Owen, J.J., W.L. Silver. 2013. Greenhouse gas emissions from dairy manure management: a review of field-based studies. American Geophysical Union Fall Meeting.

Owen, J.J., W.L. Silver. 2013. When the manure hits the land: Carbon sequestration potential of organic matter amendments to California annual grasslands. Ecological Society of America 98th Annual Meeting.

Owen, J.J., W.L. Silver. 2012. Carbon content of managed grasslands under Mediterranean climate and implications for carbon sequestration. American Geophysical Union Fall Meeting.

***Owen, J.** 2010. Constraining rates of desert soil formation using cosmogenic nuclides. Isotope seminar, Department of Earth and Planetary Sciences, University of California, Berkeley, and NASA Ames special seminar.

Owen, J.J., R. Amundson, W.E. Dietrich, K. Nishiizumi, R.C. Finkel, G. Chong. 2009. The zebra stripes of the Atacama Desert: Geomorphic evidence of quaternary climate changes. Eos Trans. AGU, 90(52), Fall Meeting Supplement, Abstract EP44A-04.

Owen, J. J., W.E. Dietrich, K. Nishiizumi, D. Bellugi, R. Amundson. 2008. Boundary condition effects on hillslope form and soil development along a climatic gradient from semiarid to hyperarid in northern Chile. Eos Trans. AGU, 89(53), Fall Meeting Supplement, Abstract H53G-04.

Owen, J., R. Amundson, W. Dietrich, K. Nishiizumi. 2008. Boundary conditions and climate: Dual controls on hillslope evolution in the Atacama Desert. Geological Society of America Abstracts with Programs 40(6): 533.

Owen, J., K. Nishiizumi, R. Amundson, W.E. Dietrich, K. Yoo. 2008. Where precipitation matters: ^{10}Be and ^{26}Al-derived hillslope denudation rates in the Atacama Desert, Chile. Geochimica et Cosmochimica Acta 72(12S): A714.

***Owen, J.** 2008. How old? How slow? Cosmogenic radionuclides in the Atacama Desert, Chile. Isotope seminar, Department of Earth and Planetary Sciences, University of California, Berkeley.

Owen, J., W.E. Dietrich, K. Nishiizumi, G. Chong, R. Amundson. 2007. The impact of climate and boundary conditions on hillslope erosion rates in northern Chile. Eos Trans. AGU 88(52), Fall Meeting Supplement, Abstract V13F-05.

Owen, J., W.E. Dietrich, K. Nishiizumi, G. Chong, R. Amundson. 2007. The impact of climate and boundary conditions on hillslope erosion rates in the Atacama Desert, Chile. Geological Society of America Abstracts with Programs 39(6): 637.

Owen, J.J., R. Amundson, W.E. Dietrich, K. Nishiizumi, B. Sutter, R. Finkel. 2006. Climatically-driven changes in bedrock erosion rate and process on semiarid to hyperarid hillslopes in the Atacama Desert, Chile. EOS Trans. AGU 87(52), Fall Meeting Supplement, Abstract T11A-0412.

Owen, J., R. Amundson, K. Yoo, W.E. Dietrich, K. Nishiizumi, R. Finkel. 2006. Chemical weathering vs. physical erosion in hyperarid, arid, and semiarid hillslopes soils in the Atacama Desert – Discovering a Process Threshold. Geological Society of America Abstracts with Programs 38(7): 59.

Owen, J., W.E. Dietrich, K. Nishiizumi, R. Amundson, B. Sutter, R. Finkel. 2005. The effect of hyperaridity and boundary conditions on hillslope soils and geomorphology in the Atacama Desert, Chile. EOS Trans. AGU 86(52), Fall Meeting Supplement, Abstract H33C-1398.

Owen, J., W.E. Dietrich, K. Yoo, R. Amundson, K. Nishiizumi. 2004. The Effects of Hyperaridity on soil production and transport on hillslopes: Adapting geomorphic models in the Atacama Desert, Chile. EOS Trans. AGU 85(47), Fall Meeting Supplement, Abstract H51C-1158.

Owen, J., K. Nishiizumi, W. Sharp, B. Sutter, S. Ewing, R. Amundson. 2003. Investigations into the numerical ages of post-Miocene fluvial landforms in the Atacama Desert, Chile. EOS Trans. AGU 84(96), Fall Meeting Supplement, Abstract T31C-0857.

Owen, J., J.P. Donnelly. 2000. Sedimentary evidence of intense hurricane strikes from coastal wetland deposits in western Buzzards Bay, Massachusetts. Geological Society of America Abstracts with Programs 32(1), 63-64.

TEACHING EXPERIENCE

Courses:

University of San Francisco, Spring 2011

- Taught *Understanding our Environment* (ENVS100), an introductory course of non-majors, 35 students. Developed my own lectures, homeworks, and exams. Used school website to communicate with students, manage grades, and exchange files.

University of California, Berkeley, Fall 2010

- Co-taught *Soil Characteristics* (ESPM120) with C. Pallud. Developed and presented 30% of the lectures, prepared 3 in-class demonstrations and field activities, and prepared and graded 2 homework sets.

Guest lectures:

University of California, Berkeley, Fall 2011, 2012 and 2013

- Gave a total of 7 guest lectures on soil taxonomy, soil geography, and clay mineralogy for *Soil Characteristics* (ESPM120, C. Pallud)

University of California, Berkeley, Spring 2006 and 2009

- Gave a total of 3 guest lectures on the lithosphere, soils, and clay formation for *Global Change and Biogeochemistry* (GEOG143, R. Rhew)

University of California, Berkeley, Spring 2007

- Gave a guest lecture on desertification for *Introduction to Environmental Sciences* (ES10, A. Goldstein, M.K. Firestone)

Laboratory sections:

University of San Francisco, Spring 2011

- Led one lab section for *Understanding our Environment* (ENVS100)
- Led one lab section for *Human Ecology* (ENVS210, taught by G. Coffman)

University of California, Berkeley, Spring 2006, 2007 and 2009

- Led a total of 3 lab sections for *Global Change and Biogeochemistry* (GEOG143, R. Rhew)

Discussion sections:

University of California, Berkeley, Spring 2006 and 2007

- Led discussion sections for *Introduction to Environmental Sciences* (ES10, A. Goldstein, M.K. Firestone, I. Fung), created 3 homework assignments and grading rubrics for the entire class (~130 students), contributed to writing of exams**.**

PROFESSIONAL ASSOCIATIONS

American Geophysical Union, Ecological Society of America

REVIEWER

Global Change Biology, Earth Surface Processes and Landforms, *Journal of Geophysical Research, The Journal of Geology, Geomorphology,* Austrian Science Fund (FWF), and NSF

COMMUNITY OUTREACH AND MENTORING

2009-2014	Invited speaker, Edison Elementary School, Alameda, CA, on being a geologist.
2012	Mentored a community college student as part of the Environmental Leadership Pathway summer program (transitioning students from 2-year colleges to a UC school), culminating in a poster presentation of her research.
2010	Invited speaker, the Drew School, San Francisco. Talked to 4 biology classes and 1 earth science class about the microbiology and geology of the Atacama Desert.
2010	Science fair judge, Coliseum College Prep Academy, Oakland.
2010	Volunteer, Golden Gate Audubon Society. Assisted with Eco-Oakland and Eco-Richmond environmental science field trips.
2009	Invited speaker, Malcolm X Elementary, Berkeley, CA, and Grass Valley Elementary School, Oakland, CA, on being a geologist.

FIELD EXPERIENCE

2011-present	Soil, biomass, and greenhouse gas sampling on dairies in California
2008	Soil and salar sampling in northern Chile
2006	Soil sampling and sprinkling experiments in northern Chile
2005	Surveying, soil and rock sampling, site characterization in northern Chile
2004	Soil sampling and field reconnaissance in northern Chile
2003	6-week soil field course, University of California, Davis.
1999	6-week geology field course, University of New Mexico, Albuquerque.

COMPUTER EXPERIENCE

Proficient with Mac and PC, Microsoft Office, and JMP statistical software. Basic ArcGIS.

OTHER INTERESTS

Running (RRCA-certified coach for Aerobicmonster.com, co-captain of the Tamalpa Running Club team 2013-present), gardening, backpacking (John Muir Trail 2007)