

Lara M. Kueppers

Energy and Resources Group
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Climate Sciences Department
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Research Interests & Expertise

Climate-ecosystem interactions, ecological impacts of climate change, agriculture and climate change, plant-microbe interactions, regional climate modeling, model-experiment integration, species effects on ecosystem function, climate change policy.

Education

University of California, Berkeley
Ph.D. (2003) Environmental Science, Policy and Management
Dissertation: *Forest Carbon Cycling Along an Elevation Gradient: The Influence of Species and Climate* (Committee: J. Harte, chair; C. D'Antonio; W. Silver; M. Torn)

Stanford University
B.S., M.S. (1996) Earth Systems – Biosphere track
Thesis: *The Effects of Tree Species Richness on Nutrient Cycling in a Tropical Moist Forest in Puerto Rico* (Committee: H. Mooney; W. Silver)

Positions

2017-present *Assistant Professor*, Energy and Resources Group, UC Berkeley
2017-present *Faculty Scientist*, Climate and Ecosystem Sciences Group, Lawrence Berkeley National Laboratory
2013-present *Assistant Research Scientist*, Sierra Nevada Research Institute, UC Merced
2013-2016 *Research Scientist*, Earth Sciences Division, Lawrence Berkeley National Laboratory
2012-2013 *Faculty Scientist*, Earth Sciences Division, Lawrence Berkeley National Laboratory
2006-2013 *Assistant Professor*, School of Natural Sciences, UC Merced
2006 *Instructor*, Rocky Mountain Biological Laboratory, Colorado
2006 *Senior Research Associate*, Climate Change and Carbon Management Program, Earth Sciences Division, Lawrence Berkeley National Laboratory
2004-2006 *Postdoctoral Researcher*, Department of Earth Sciences, UC Santa Cruz (L. C. Sloan, advisor)
1995 *Graduate Student Researcher*, International Institute of Tropical Forestry, Puerto Rico

Professional Development

2015-2016 Center for Executive Education, UC Berkeley, 2016 Leadership Development Program for Emerging Leaders

Grants and Awards

Current (\$5,131,836 as lead PI)

2014-2018 DOE BER, co-PI; PI J. Q. Chambers, other co-PIs S. Davies, R. Fisher, M. Keller C. Koven, R. Leung, N. McDowell, R. Norby, A. Rogers (total \$30,000,000)

2015-2018 NSF Dimensions of Biodiversity, co-PI; PI A. C. Frank, other co-PI J. Pett-Ridge (total \$1,623,786)

2012-2017 USDA-AFRI, co-PI; PI W. Thompson, other co-PIs J. E. Campbell, P. Zimmel, L. Sloan, M. Snyder, G. Knapek, J. Outlaw (UCM \$271,024, with J. E. Campbell)

2007-2017 US Department of Energy, Office of Science, Terrestrial Ecosystem Sciences, PI; co-PIs M. Torn, J. Harte, J. Mitton, M. Germino (total \$5,131,836; UCM \$2,947,755)

Completed (\$936,395 as lead PI)

2012-2015 LBNL-LDRD, PI (total \$834,256)

2013-2014 NSF-IOS, co-PI; PI A. C. Frank (total \$150,335)

2011-2012 UC Merced Graduate Research Council, PI; co-PI A. Westerling (\$9,997)

2010-2012 UC Merced Graduate Research Council, co-PI; PI A. C. Frank (\$9,200)

2009 California Energy Commission, UCOP-CIEE, PI; co-PI J. E. Campbell (\$10,000)

2008 Colorado Native Plant Society, PI; Collaborator R. Butz (\$1,000)

2007-2008 California Energy Commission, Public Interest Energy Research-Environmental Area, PI; co-PIs M. Torn, W. Riley (total \$74,992; UCM \$49,261)

2001-2002 Center for Accelerator Mass Spectrometry Grant, Lawrence Livermore National Laboratory (\$5,400 + ~80 radiocarbon analyses worth ~\$24,000)

1998, 2002 Grant-in-Aid of dissertation research, Sigma Xi, Berkeley Chapter (\$750)

1999-2001 Environmental Defense Minigrant, Environmental Defense, NY, Collaborator; PI J. Harte (\$15,000)

Other Awards and Fellowships

2015 Women @ The Lab award, Lawrence Berkeley National Laboratory

2004 Central Coast Joint Data Committee, 2004 GIS Day Map Contest Award

2004 Postdoctoral Program in Climate and Global Change, NOAA (selected as alternate)

1999-2003 Graduate Research Environmental Fellowship, US Department of Energy (\$76,400)

2001 Walter and Ruth Schubert Prize in Ecosystem Sciences, UC Berkeley (\$2,000)

1999-2000 University Fellowship, UC Berkeley (I declined this award)

1997-1998 University Fellowship, UC Berkeley (\$13,000)

Submitted Manuscripts (*student co-author)

- Christianson, D., C. Varadharajan, B. Christoffersen, M. Detto, B. Faybishenko, K. Jardine, R. Negron-Juarez, B. Gimenez, G. Pastorello, T. Powell, J. Warren, B. Wolfe, J. Chambers, **L. Kueppers**, N. McDowell, and D. Agarwal. A metadata reporting framework (FRAMES) for synthesis of earth system science observations.
- *Massoud, E. C., C. Xu, R. Fisher, R. Knox, A. Walker, S. Serbin, J. Holm, **L. M. Kueppers**, D. Ricciuto, L. Wei, D. Johnson, C. Koven, N. McDowell, and J. Vrugt. Identification of key biological controls in forest dynamics based on a sensitivity analysis to the Community Land Model with Ecosystem Demography, CLM4.5(ED).
- Bagley, J., **L. M. Kueppers**, D. P. Billesbach, I. N. Williams, S. C. Biraud, and M. S. Torn. Impact of land management on surface water and energy fluxes in the Southern Great Plains.
- Holm, J., R. Knox, A. Lima, C. Koven, W. Riley, M. Longo, R. Negron-Juarez, A. Arujo, A. Manzi, **L. M. Kueppers**, P. Moorcroft, N. Higuchi, and J. Q. Chambers. Modeling the Central Amazon forest carbon sink and forest dynamics under current and rising atmospheric carbon dioxide.
- Negron-Juarez, R., H. Jenkins, C. Raupp, W. Riley, **L. Kueppers**, D. Magnabosco Marra, G. Ribeiro, M. Terezinha Monteiro, L. Candido, J. Chambers, and N. Higuchi. Windthrow variability in Central Amazonia.
- Lu, Y., I. Williams, J. Bagley, M. Torn, and **L. M. Kueppers**. Development of a winter wheat model in the Community Land Model (version 4.5).
- Lazarus, B. E., C. Castanha, M. J. Germino, **L. M. Kueppers**, and A. B. Moyes. Water stress and growth strategies explain differences in tree species' response to warming at high elevations.
- *Carper, D. L., A. A. Carrell*, **L. M. Kueppers**, and C. Frank. The effects of climate change on above- and belowground bacterial endophytic communities in subalpine conifer seedlings establishing across an elevation gradient.
- W. Thompson, Lu, Y., J. E. Campbell, S. Gerlt*, **L. M. Kueppers**, M. A. Snyder, and X. Yang*. Automatic responses of crop stocks and policies buffer climate change effects on crop markets and price volatility.
- Lu, Y., K. Harding, and **L. M. Kueppers**. Irrigation effects on land-atmosphere coupling strength in the United States. *Journal of Climate*, in review.
- Conlisk, E., C. Castanha, M. Germino, T. T. Veblen, J. Smith*, and **L. M. Kueppers**. Declines in low elevation subalpine tree populations outpace high elevation population expansion with warming. *Journal of Ecology*, in revision.
- Baker, E. A. G., J. L. Wegrzyn, U. U. Sezen, T. Falk, P. E. Maloney, D. R. Vogler, C. Jensen, J. Mitton, J. Wright, B. Knaus, H. Rai, R. Cronn, D. Gonzalez-Ibeas, H. A. Vasquez-Gross, R. A. Famula, J.-J. Liu, **L. M. Kueppers**, and D. B. Neale. Comparative transcriptomics among four white pine species.
- Kueppers, L.M.**, A. Faist, J. Wolf*, S. Ferrenberg, and C. Castanha. Warming similarly accelerates germination and initial seedling development in high and low elevation provenances of two widespread subalpine conifers.
- *Lubetkin, K., A. L. Westerling, and **L. M. Kueppers**. Climate and landscape drive the pace and pattern of conifer encroachment into subalpine meadows. *Ecological Applications*, in revision.

Publications (*student co-author, [#] ISI Times cited, Researcher ID M-8323-2013, ORCID ID 0000-0002-8134-3579)

- Holm, J., **L. Kueppers**, J. Chambers. 2017. Novel tropical forests: response to global change. *New Phytologist*, in press.
- Kueppers, L.M.**, E. Conlisk, C. Castanha, A. Moyes, M. Germino, P. de Valpine, M. S. Torn, and J. B. Mitton. 2016. Warming and provenance limit tree recruitment across and beyond the elevation range of subalpine forest. *Global Change Biology*, doi: 10.1111/gcb.13561.
- Williams, I. N., Y. Lu, **L. M. Kueppers**, W. J. Riley, S. Biraud, J. Bagley, and M. S. Torn. 2016. Land-atmosphere coupling and climate prediction over the U.S. Southern Great Plains. *Journal of Geophysical Research – Atmospheres*, doi:10.1002/2016JD025223.
- Thompson, W., S. Gerlt*, J. E. Campbell, **L. M. Kueppers**, Y. Lu, M. A. Snyder. 2016. A cost of tractability? Estimating climate change impacts using a single crop market understates impacts on market conditions and variability. *Applied Economic Perspectives and Policy*, doi:10.1093/aep/ppw023.
- Williams, I. N., W. J. Riley, **L. M. Kueppers**, M. S. Torn, and S. C. Biraud. 2016. Separating the effects of phenology and diffuse radiation on gross primary productivity in winter wheat. *Journal of Geophysical Research – Biogeosciences*, 121(7):1903-1915. doi:10.1002/2015JG003317. [0]
- Kueppers, L. M.**, C. M. Iversen, and C. D. Koven. 2016. Expanding use of plant trait observations in Earth system models, *Eos*, 97, doi:10.1029/2016EO049947.
- *Winkler, D. E., K. J. Chapin*, and **L. M. Kueppers**. 2016. Soil moisture mediates alpine life form and community productivity responses to warming. *Ecology* 97(6): 1553-1563. doi:10.1890/15-1197.1. [1]
- Moyes, A. B., **L. M. Kueppers**, J. Pett-Ridge, D. Carper*, N. Vandehey, J. O’Neil, and A. C. Frank. 2016. Evidence for foliar endophytic nitrogen-fixation in a widely distributed subalpine conifer. *New Phytologist* 210:657-668 doi: 10.1111/nph.13850. Commentary by N. Wurzburger doi: 10.1111/nph.13925. [2]
- *Fernández, M. H. Hamilton, and **L. M. Kueppers**. 2015. Back to the future: using historical climate variation to project near-term shifts in habitat suitable for coast redwood. *Global Change Biology* 21(11):4141-4152 doi: 10.1111/gcb.13027. [0]
- *Lu, Y. and **L. M. Kueppers**. 2015. Increased heat waves with loss of irrigation in the United States. *Environmental Research Letters*. 10: 064010, doi:10.1088/1748-9326/10/6/064010. [0]
- Reinhardt, K., M. Germino, **L. M. Kueppers**, J.-C. Domec, and J. Mitton. 2015. Linking carbon and water relations to drought-induced mortality in *Pinus flexilis* seedlings at their lower-elevation limit. *Tree Physiology* 35:771-782 doi: 10.1093/treephys/tpv045. [2]
- Moyes, A. B., M. J. Germino, **L. M. Kueppers**. 2015. Moisture rivals temperature in limiting photosynthesis by trees establishing beyond their cold-edge range limit under ambient and warmed conditions. *New Phytologist* 207:1005-1014 DOI: 10.1111/nph.13422. [2]
- *Lu, Y., J. Jin, and **L. M. Kueppers**. 2015. Crop growth and irrigation interact to influence surface fluxes in a regional climate-cropland model (WRF3.3-CLM4crop). *Climate Dynamics* 45:3347–3363 doi: 10.1007/s00382-015-2543-z. [5]

- *Meromy, L., N. P. Molotch, M. Williams, K. Musselman, and **L. M. Kueppers**. 2015. Snowpack-climate manipulation using infrared heaters in subalpine forests of the Southern Rocky Mountains, USA. *Agricultural and Forest Meteorology* 203: 142-157 doi:10.1016/j.agrformet.2014.12.015. [0]
- Suding, K., E. Farrar, A. King, **L. M. Kueppers**, and M. Spasojevic. 2015. Vegetation change at high elevation: Scale-dependence and interactive effects on Niwot Ridge. *Plant Ecology & Diversity* 8:713-725. DOI: 10.1080/17550874.2015.1010189. [0]
- *Fernández, M., H. Hamilton, and **L. M. Kueppers**. 2013. Characterizing uncertainty in species distribution models derived from interpolated weather station data. *Ecosphere*. 4(5): 61. <http://dx.doi.org/10.1890/ES13-00049.1> [5]
- Moyes, A. B., C. Castanha, M. Germino, and **L. M. Kueppers**. 2013. Warming and the dependence of limber pine (*Pinus flexilis*) establishment on summer soil moisture within and above its current elevation range. *Oecologia*. 171:271-282. doi: 10.1007/s00442-012-2410-0. [25]
- Castanha, C., M.S. Torn, M.J. Germino, *B. Weibel, and **L.M. Kueppers**. 2013. Conifer seedling recruitment across a forest-to-alpine tundra gradient and effects of provenance. *Plant Ecology and Diversity*. 6(3-4): 307-318. doi:10.1080/17550874.2012.716087. [8]
- *Lu, Y., and **L. M. Kueppers**. 2012. Surface energy partitioning over four dominant vegetation types across the United States in a coupled regional climate model (WRF3-CLM3.5). *Journal of Geophysical Research - Atmospheres*. 117: D06111. doi: 10.1029/2011JD016991 [10]
- Harte, J. and **L. M. Kueppers**. 2012. Insight from integration. *Nature* 485(7399): 449. [6]
- Barbour, E. and **L. M. Kueppers**. 2012. Conservation and management of ecological systems in a changing California. *Climatic Change*. 111(1): 135-163. doi: 10.1007/s10584-011-0246-y [4]
- Kueppers, L. M.**, and M. A. Snyder. 2011. Influence of agricultural irrigation on surface energy and water fluxes, surface climate, and atmospheric circulation in California. *Climate Dynamics*. 38(5-6): 1017-1029. doi: 10.1007/s00382-011-1123-0. [22]
- Reinhardt, K., C. Castanha, M. J. Germino, **L. M. Kueppers**. 2011. Ecophysiological variation in two provenances of *Pinus flexilis* seedlings across an elevation gradient from forest to alpine. *Tree Physiology* 31(6): 615-625. [15]
- *Subin, Z. M., W. J. Riley, J. Jin, *D. S. Christianson, M. S. Torn, **L. M. Kueppers**. 2011. Ecosystem feedbacks to climate change in California: Development, testing, and analysis using a coupled regional atmosphere and land-surface model (WRF3-CLM3.5). *Earth Interactions*. 15(15): 1-38. doi: 10.1175/2010EI331.1. [24]
- Luo, Y., J. M. Melillo, S. Niu, C. Beier, J. Clark, E. Davidson, J. Dukes, R. D. Evans, C. Field, C. Czimczik, M. Keller, B. Kimball, **L. Kueppers**, R. Norby, S. Peline, E. Pendall, E. Rastetter, J. Six, M. Smith, M. G. Tjoelker, and M. S. Torn. 2011. Coordinated approaches to quantify long-term ecosystem dynamics in response to global change. *Global Change Biology*, 17(2): 843-854. doi: 10.1111/j.1365-2486.2010.02265.x. [73]
- *Anderson, R., J. G. Canadell, J. T. Randerson, R. B. Jackson, B. A. Hungate, D. D. Baldocchi, G. A. Ban-Weiss, G. B. Bonan, K. Caldeira, L. Cao, N. S. Diffenbaugh, K. R. Gurney, **L. M. Kueppers**, B. E. Law, S. Luyssaert, T. L. O'Halloran. 2011. Biophysical considerations in forestry for climate protection *Frontiers in Ecology and the Environment*, 9(3): 174-182. [66]

- Jackson, R. B., J. T. Randerson, J. G. Canadell, *R. G. Anderson, R. Avissar, D. D. Baldocchi, G. B. Bonan, K. Caldeira, N. S. Diffenbaugh, C. B. Field, B. A. Hungate, E. G. Jobbágy, **L. M. Kueppers**, M. D. Noretto, and D. E. Pataki. 2008. Protecting climate with forests. *Environmental Research Letters* 3: 044006. [133]
- Lobell, D. B., C. J. Bonfils, **L. M. Kueppers**, and M. A. Snyder. 2008. Irrigation cooling effect on temperature and heat index extremes. *Geophysical Research Letters* 35: L09705. [29]
- Kueppers, L. M.**, M. A. Snyder, L. C. Sloan, D. Cayan, J. Jin, H. Kanamaru, M. Kanamitsu, N. L. Miller, M. Tyree, *H. Du, and B. Weare. 2008. Seasonal temperature responses to land-use change in the western United States. *Global and Planetary Change*, doi:10.1016/j.gloplacha.2007.1003.1005. [43]
- Kueppers, L. M.**, M. A. Snyder, and L. C. Sloan. 2007. Irrigation cooling effect: Regional climate forcing by land-use change, *Geophysical Research Letters*, 34, L03703, doi:10.1029/2006GL028679. [111]
- Kueppers, L. M.**, E. Zavaleta, B. Fulfroost, M. A. Snyder, and L. C. Sloan. 2006. Constrained range expansion and climate change assessments - The authors reply. *Frontiers in Ecology and the Environment* 4(4): 179. [1]
- Kueppers, L. M.**, and J. Harte. 2005. Subalpine forest carbon cycling: Short- and long-term influences of climate and species. *Ecological Applications* 15(6): 1984-1999. [29]
- Kueppers, L. M.**, M. A. Snyder, L. C. Sloan, E. S. Zavaleta, and B. Fulfroost. 2005. Modeled regional climate change and California endemic oak ranges. *Proceedings of the National Academy of Science* 102(45): 16281-16286. [78]
- Kueppers, L. M.**, J. Southon, P. Baer and J. Harte. 2004. Dead wood biomass and turnover time, measured by radiocarbon, along a subalpine elevation gradient. *Oecologia* 141(4): 641-651. [80]
- Silver, W. L., **L. M. Kueppers**, A. E. Lugo, R. Ostertag, and V. Matzek. 2004. Carbon sequestration and plant community dynamics following reforestation of tropical pasture. *Ecological Applications* 14(4): 1115-1127. [67]
- Kueppers, L. M.**, P. Baer, J. Harte, B. Haya, L. E. Koteen, and M. E. Smith. 2004. A decision matrix approach to evaluating the impacts of land use activities undertaken to mitigate climate change. *Climatic Change* 63: 247-257. [11]

Reports and Other Publications (*student co-author)

- Koven, C., **L. M. Kueppers**, C. Iversen, P. Reich, and P. Thornton. 2016. *Expanding the use of plant trait observations and ecological theory in Earth system models*. Report of the workshop on “Trait Methods for Representing Ecosystem Change” U. S. Department of Energy.
- Kueppers, L. M.** and J. E. Campbell. 2009. *Potential effects of climate change on California’s bioenergy resources*. California Energy Commission Discussion Paper.
- Kueppers, L.M.**, W. Riley, J. Jin, *Z. Subin, *D. Christianson, M. Torn. 2009. *Ecosystem Feedbacks to Climate Change in California: Integrated Climate Forcing From Vegetation Redistribution*. California Energy Commission, Public Interest Energy Research Program. CEC-500-2009-075.
- Barbour, E., and **L. Kueppers**. 2008. *Conservation and Management of Ecological Systems in a Changing California*. Public Policy Institute of California, <http://www.pplic.org/main/publication.asp?i=856>, 42pp.

- Hanson P. J., A.T. Classen, **L. Kueppers**, Y. Luo, N.G. McDowell, J. Morris, A. Rogers, P. Thorton, R. Ceulemans, J. Dukes, M. Goulden, R. Jackson, A. Knapp, M. Kirschbaum, K. Lewin, M. MacCracken, J. Melillo, T. Ringler. 2008. *Ecosystem research: Understanding climate change impacts on ecosystems and feedbacks to the physical climate*. Report of the workshop on “Exploring Science Needs for the Next Generation of Climate Change and Elevated CO₂ Experiments in Terrestrial Ecosystems” U. S. Department of Energy.
- Kueppers, L.M.**, M.S. Torn, and J. Harte 2007. *Quantifying Ecosystem Feedbacks to Climate Change: Observational Needs and Priorities*. A report to the Office of Biological and Environmental Research, Office of Science, U. S. Department of Energy.
- Kueppers, L.M.** 2005. Benefits of a regional climate model. *Science* 310: 1278-1279. [1]
- Snyder, M. A., **L. M. Kueppers**, L. C. Sloan, D. Cayan, J. Jin, H. Kanamaru, M. Kanamitsu, N. L. Miller, M. Tyree, *H. Du, and B. Weare. 2006. *Regional Climate Effects of Irrigation and Urbanization in the Western United States: A Model Intercomparison*. California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2006-031.

Invited Presentations

- 2016 Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ
Ecology and Evolution Seminar, UC Davis, CA
OECD Workshop on Virtual Water in Agricultural Products: Quantification, Limitations and Trade Policy, University of Nebraska, Lincoln, NE
Institute of Mountain Hazards and Environment, Chinese Academy of Sciences, Chengdu, China
Community Earth System Model 21st Annual Workshop (Plenary), Breckenridge, CO
DOE ESS PI Meeting, Potomac, MD
DOE BER Advisory Committee March 2016 Meeting, Gaithersburg, MD
Energy and Resources Group, University of California, Berkeley
- 2015 American Geophysical Union 2015 Fall Meeting (2 talks on different topics)
California EPA Workshop on Indicators of Climate Change in California, Sacramento, CA
Energy and Resources Group, University of California, Berkeley
- 2014 American Geophysical Union 2014 Fall Meeting
Department of Biology, Penn State University
INTERFACE Workshop, Beijing, China
DOE PI Meeting, Potomac, MD
Department of Biology, University of Utah
- 2013 Landscape and Architecture and Environmental Planning Department, UC Berkeley
Ecological Society of America 2013 Annual Meeting
DOE PI Meeting, Potomac, MD
- 2012 Energy and Resources Group, UC Berkeley
Department of Ecology and Evolutionary Biology, Ohio State University
Climate Sciences Department, Lawrence Berkeley National Laboratory
Central Rockies White Pine Health Working Group, Fort Collins, CO
- 2010 American Geophysical Union 2010 Fall Meeting
Duke University

- California State University, Fresno
Lawrence Livermore National Laboratory
Ecological Society of America Annual Meeting
High-Five Symposium, University of Montana, Missoula
Department of Earth and Planetary Sciences, University of California, Santa Cruz
Department of Environmental Science, Policy and Management, University of California, Berkeley
- 2009 Mountain Research Station, University of Colorado
Annual Meeting of the International Association of Landscape Ecologists, Snowbird, Utah
Department of Biological Sciences Spring Colloquium, California State University, Stanislaus
National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara
- 2008 Fifth Annual California Climate Change Conference, Sacramento, California (poster given by W. J. Riley, Kueppers on leave).
- 2007 EPA Workshop: Climate Change Effects on Biological Indicators. Baltimore, Maryland.
- 2006 Dissertation Initiative for the Advancement of Climate Change Research, Pacific Grove, California (poster)
Department of Biology, San Diego State University
School of Natural Sciences, University of California, Merced
Environmental Change Initiative, Brown University
Huxley College of the Environment, Western Washington University
- 2005 Environmental Systems Seminar, University of California, Merced
Global Environmental Change and Biodiversity Workshop, Dourdan, France (poster)
- 2004 W. Silver lab seminar, University of California, Berkeley
Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory
EcoEvo Seminar, Department of Biological Sciences, Stanford University
- 2003 Department of Earth System Science, University of California, Irvine

Contributed Presentations (*student co-author)

- Christianson, D. S., C. Varadharajan, M. Detto, B. Faybishenko, B. Gimenez*, K. Jardine, R. I. Negron Juarez, G. Pastorello, T. Powell, J. Warren, B. Wolfe, N. G. McDowell, **L. M. Kueppers**, J. Chambers and D. Agarwal. 2016. A metadata reporting framework for standardization and synthesis of ecohydrological field observations. American Geophysical Union Fall Meeting. San Francisco, CA.
- Williams, I. N., Y. Lu, **L. M. Kueppers**, W. J. Riley, S. Biraud, J. E. Bagley, and M. S. Torn. 2016. Land-atmosphere coupling and climate prediction over the U.S. Southern Great Plains. American Geophysical Union Fall Meeting. San Francisco, CA.
- Bagley, J. E., S. Biraud, **L. M. Kueppers**, Y. Lu, I. N. Williams, and M. S. Torn. 2016. Influence of agricultural and vegetation responses to climate variability on land-atmosphere coupling in the U.S. Great Plains. American Geophysical Union Fall Meeting. San Francisco, CA.
- Christoffersen, B. O., C. Xu, R. Fisher, N. Fyllas, M. Gloor, S. Fauset, D. Galbraith, C. Koven,

- R. G. Knox, **L. M. Kueppers**, J. Q. Chambers, P. Meir, and N. G. McDowell. 2016. A physiologically-based plant hydraulics scheme for ESMs: impacts of hydraulic trait variability for tropical forests under drought. American Geophysical Union Fall Meeting. San Francisco, CA.
- Powell, T., **L. M. Kueppers**, C. Koven, D. J. Johnson, B. Faybishenko, N. G. McDowell, and J. Q. Chambers. How does variation in rainfall affect simulated tropical tree mortality, functional diversity and coexistence? American Geophysical Union Fall Meeting. San Francisco, CA.
- Kueppers, L. M.**, D. Quiroz, D. L. Carper*, P. S. Guzman*, J. Kupihea* and A. C. Frank. Endophytic nitrogen fixation potential in conifer foliage along a soil fertility gradient. 2016. Ecological Society of America Annual Meeting, Fort Lauderdale, FL.
- Powell, T., **L. M. Kueppers**, C. Koven, D. J. Johnson, N. G. McDowell, and J. Q. Chambers. Modelling drought-induced tree mortality of a seasonally dry tropical forest in Panama. 2016. Ecological Society of America Annual Meeting, Fort Lauderdale, FL.
- Holm, J. A., R. Negron-Juarez, R. Knox, J. Q. Chambers, C. Koven, D. M. Marra, S. W. Rifai, N. Higuchi and **L. Kueppers**. 2016. Linking ecosystem demography modeling and field experiments to understand tropical forest response to novel disturbance regimes. Ecological Society of America Annual Meeting, Fort Lauderdale, FL.
- *Carper, D., A. Carrell, **L. M. Kueppers**, and A. C. Frank. 2016. The effect of climate change and site on the above- and belowground bacterial endophytic communities of subalpine conifer seedlings. Botany 2016. Savannah, GA.
- Bagley, J., I. Williams, **L. M. Kueppers**, Y. Lu, M. Torn, and S. Biraud. 2015. Energy and water fluxes across a heterogeneous landscape in the Southern Great Plains. American Geophysical Union Fall Meeting. San Francisco, CA.
- Lu, Y., F. Melton, and **L. M. Kueppers**. 2015. Fallow land effects on land-atmosphere interactions in California drought. American Geophysical Union Fall Meeting. San Francisco, CA.
- Williams, I., M. Torn, Y. Lu, **L. M. Kueppers**, and J. Bagley. 2015. Vegetation controls on surface heat flux partitioning, and land-atmosphere coupling. American Geophysical Union Fall Meeting. San Francisco, CA.
- *Jabis, M., D. Winkler*, and **L. M. Kueppers**. 2015. Warming contracts flowering phenology in an alpine ecosystem. American Geophysical Union Fall Meeting. San Francisco, CA.
- Kueppers, L. M.**, E. Conlisk, C. Castanha, A. B. Moyes, M. Germino, J. M. Smith*, and T. T. Veblen. 2015. Projecting changes in subalpine tree populations with warming across an elevation gradient. Perth III: Mountains of our Future Earth Conference, Perth, Scotland.
- Conlisk, E., C. Castanha, A. B. Moyes, M. J. Germino, J. M. Smith*, T. T. Veblen, **L. M. Kueppers**. 2015. Projecting changes in subalpine tree populations with warming across an elevation gradient. Ecological Society of America Annual Meeting, Baltimore, MD.
- *Lubetkin, K. C., A. L. Westerling, **L. M. Kueppers**. 2015. Interacting effects of climate on life stages of conifers encroaching into subalpine meadows. Ecological Society of America Annual Meeting, Baltimore, MD.
- *Christianson, D. S., J. Harte, C. G. Kaufman, **L. M. Kueppers**. 2015. Microclimate influences on red fir seedlings in the Sierra Nevada. Ecological Society of America Annual Meeting, Baltimore, MD.
- Lu, Y. and **L. M. Kueppers**. 2015. Irrigation reduces land-atmosphere coupling strength in the

- Midwest and Northern Great Plains. Berkeley Atmospheric Science Symposium. Berkeley, CA.
- Lu, Y., **L. M. Kueppers**, and J. E. Campbell. 2015. Climate change increases yield variability of multiple U.S. crops. Berkeley Atmospheric Science Symposium. Berkeley, CA.
- Lu, Y. and **L. M. Kueppers**. 2014. Irrigation reduces land-atmosphere coupling strength in the Midwest and Northern Great Plains. American Geophysical Union Fall Meeting. San Francisco, CA.
- Germino, M., B. Lazarus, C. Castanha, A. B. Moyes, and **L. M. Kueppers**. 2014. Physiological limitation at alpine treeline: relationships of threshold responses of conifers to their establishment patterns. American Geophysical Union Fall Meeting. San Francisco, CA.
- *Lubetkin, K. C., A. L. Westerling, **L. M. Kueppers**. 2014. Life stage filters on conifer encroachment into subalpine meadows in the central Sierra Nevada, California. Ecological Society of America Annual Meeting, Sacramento, CA.
- Moyes, A. B., C. Castanha, **L. M. Kueppers**. 2014. Microclimate factors affecting seedling emergence and survival of three conifer species within and above their current elevation ranges: results of a multi-year climate manipulation study in the Colorado Rocky Mountains. Ecological Society of America Annual Meeting, Sacramento, CA.
- Castanha, C., M. J. Germino, B. Lazarus, **L. M. Kueppers**. 2014. Effects of experimental climate warming on seedling growth for three subalpine conifers along a forest to alpine tundra gradient. Ecological Society of America Annual Meeting, Sacramento, CA.
- Frank, A. C., A. Carrell*, Dana L. Carper*, **Lara M. Kueppers**, A. B. Moyes. 2014. Aboveground N₂-fixing bacterial endophytes in subalpine conifers: A novel pathway for ecosystem acquisition of new nitrogen? Ecological Society of America Annual Meeting, Sacramento, CA.
- Lazarus, B., M. J. Germino, **L. M. Kueppers**, C. Castanha, A. B. Moyes. 2014. Threshold responses to cold and drought in tree seedlings vary among species at and above alpine treeline, but can they help explain establishment patterns? Ecological Society of America Annual Meeting, Sacramento, CA.
- Reinhardt, K., M. J. Germino, **L. M. Kueppers**, C. Castanha, J. Mitton, J.-C. Domec. 2014. Whole-plant evidence for mechanisms of drought-induced mortality of *Pinus flexilis* seedlings at their lower-elevation limit. Ecological Society of America Annual Meeting, Sacramento, CA.
- *Christianson, D.S., C.G. Kaufman, **L.M. Kueppers**, J. Harte. 2013. Towards a More Biologically-meaningful Climate Characterization: Variability in Space and Time at Multiple Scales. American Geophysical Union Fall Meeting. San Francisco, CA.
- O'Halloran, T.L., J.G. Barr B. Cook, M. Goeckede, B.E. Law, **L.M. Kueppers**, W.J. Riley. 2013. Predicting diffuse light-enhancement of GPP from plant functional traits: A multi-site synthesis. American Geophysical Union Fall Meeting. San Francisco, CA.
- Cairns, D.M., **L.M. Kueppers**, C.I. Millar. 2013. Advancing Integrated Understanding of Treeline Response to Environmental Change: the Alpine and Arctic Treeline Ecotone Network. American Geophysical Union Fall Meeting. San Francisco, CA.
- *Lu, Y. and **L.M. Kueppers**. 2013. Increased heat waves with loss of irrigation in United States. American Geophysical Union Fall Meeting. San Francisco, CA.

- Kueppers, L. M.**, C. Castanha, A. B. Moyes, M. Germino, M. S. Torn, J. Harte and J. Mitton. 2013. Responses of subalpine tree recruitment to warming within and above current altitudinal ranges. Ecological Society of America Annual Meeting, Minneapolis, MN.
- *Winkler, D. E. and **L. M. Kueppers**. 2013. Alpine productivity responses to climate change at multiple levels of biological organization. Ecological Society of America Annual Meeting, Minneapolis, MN.
- Cairns, D. M., **L. M. Kueppers**, and C. I. Millar. 2013. Moving forward – North American Treeline Network. Ecological Society of America Annual Meeting, Minneapolis, MN.
- Germino, M., K. Reinhardt, **L. M. Kueppers**, and A. B. Moyes. 2013. Can ecophysiology link pattern to process or molecules to landscapes for the study of treeline responses to climate? Ecological Society of America Annual Meeting, Minneapolis, MN.
- Moyes, A. B., B. Lazarus, M. Germino, and **L. M. Kueppers**. 2013. Warming reduces cold stress but increases moisture stress for establishing limber pine within and above alpine treeline. Ecological Society of America Annual Meeting, Minneapolis, MN.
- *Lubetkin, K. C., A. Westerling, and **L. M. Kueppers**. 2013. Spatial and temporal patterns of conifer encroachment into subalpine meadows in the central Sierra Nevada, California. Ecological Society of America Annual Meeting, Minneapolis, MN.
- *Lu, Y., J. Jin, and **L.M. Kueppers**. 2013. Effects of agriculture on surface energy partitioning and climate over the continental U.S. using WRF-CLM. Community Earth System Model Land Model Working Group Workshop, Boulder, CO. (Kueppers presented)
- Moyes, A. B., M. J. Germino, **L. M. Kueppers**. 2012. Physiological stresses of limber pine seedlings at and above treeline immediately following natural and experimentally advanced snowmelt. American Geophysical Union Fall Meeting. San Francisco, CA.
- Reinhardt, K., M. J. Germino, **L. M. Kueppers**, J. Mitton, and C. Castanha. 2012. Why Seedlings Die: Linking Carbon and Water Limitations to Mechanisms of Mortality During Establishment in Conifer Seedlings. American Geophysical Union Fall Meeting. San Francisco, CA.
- *Lu, Y., **L. M. Kueppers**. 2012. Dynamic crop growth improves regional climate simulation in continental United States. American Geophysical Union Fall Meeting. San Francisco, CA.
- Moyes, A.B., M.J. Germino, and **L.M. Kueppers**. 2012. Physiological Stresses of Limber Pine Seedlings at and above Treeline Immediately Following Natural and Experimentally Advanced Snowmelt. MtnClim 2012, Estes Park, CO. (poster)
- Kueppers, L. M.** C. Castanha, A.B. Moyes, M.J. Germino, and M. Torn. 2012. Alpine Treeline Warming Experiment: Effects of Microclimate on Subalpine Seedling Establishment within and Beyond Two Species' Current Elevation Ranges. MtnClim 2012, Estes Park, CO.
- *Winkler, D. and **L.M. Kueppers**. 2012. Plant cover responses to simulated climate change in alpine plant species. Ecological Society of America Annual Meeting, Portland, OR. (poster)
- Kueppers, L. M.**, A. B. Moyes, S. M. Ferrenberg, *D. S. Christianson, C. Castanha, and M. J. Germino. 2011. Manipulation of subalpine and alpine microclimate in the Alpine Treeline Warming Experiment. American Geophysical Union Fall Meeting. San Francisco, CA.

- Reinhardt, K., C. Castanha, M. J. Germino, and **L. M. Kueppers**. 2011. Leapfrogging of tree species provenances? Interaction of microclimate and genetics on upward shifts in tree species' range limits. American Geophysical Union Fall Meeting. San Francisco, CA.
- Castanha, C., A. B. Moyes, M. S. Torn, M. J. Germino, and **L. M. Kueppers**. 2011. Responses of subalpine conifer seedling germination and survival to soil microclimate in the Alpine Treeline Warming Experiment. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- *Meromy, L., *J. L. Petrzela, N. P. Molotch, M. W. Williams and **L. M. Kueppers**. 2011. Snowpack-climate manipulations using thermal infrared heaters along an elevational gradient. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- *Lubetkin, K., E. Berlow, A. Westerling, and **L. M. Kueppers**. 2011. Extent and timing of conifer encroachment into subalpine meadows in the Central Sierra Nevada, California. Ecological Society of America Annual Meeting, Austin, TX (poster)
- Kueppers, L. M.**, C. Castanha, A. B. Moyes, S. Ferrenberg, M. S. Torn, M. J. Germino. 2011. Alpine Treeline Warming Experiment: An Experimental Test of Climatic Constraints to Subalpine Tree Species' Recruitment Ranges. Interface 1st INTERFACE meeting: How Do We Improve Earth System Models? Integrating Earth System Models, Ecosystem Models, Experiments and Long-Term Data, Captiva Island, Florida (poster)
- Castanha, C., M. J. Germino, M. S. Torn, S. Ferrenberg, J. Harte, and **L. M. Kueppers**. 2010. Subalpine conifer seedling demographics: Species responses to climate manipulations across an elevational gradient at Niwot Ridge, Colorado. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- Moyes, A. B., C. Castanha, S. Ferrenberg, M. J. Germino, and **L. M. Kueppers**. 2010. Sensitivity of limber pine (*Pinus flexilis*) seedling physiology to elevation, warming, and water availability across a timberline ecotone. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- *Yang, X, E. Campbell, M. A. Snyder, L. Sloan, and **L. M. Kueppers**, 2010. Forecasting energy security impacts of biofuels using regional climate models. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- Reinhardt, K., C. Castanha, M. J. Germino, and **L. M. Kueppers**. 2010. Variation in gas exchange, carbohydrates, and growth in *Pinus flexilis* seedlings from forest to alpine. Ecological Society of America Annual Meeting, Pittsburgh, PA.
- *Lu, Y., **L. M. Kueppers**, *Z. Subin and J. Jin. 2009. Modeling the climate sensitivity to forest cover in North America. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- L. M. Kueppers**, A. Faist, S. Ferrenberg, and C. Castanha. 2009. Population and species differences in treeline tree-species germination patterns in response to climate change. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- R. J. Butz, K. Reinhardt, M. Germino, and **L. Kueppers**. 2009. Responses of alpine vegetation to global warming: Insights from comparing alpine-restricted and broad-ranging herbs along a snowmelt gradient. American Geophysical Union Fall Meeting. San Francisco, CA.
- *Subin, Z. M., J. Jin, **L. M. Kueppers**, W. J. Riley, *D. M. Svehla, M. S. Torn. 2009. Coupling WRF 3 and CLM 3.5 for regional climate simulation and understanding interactions between land cover and the atmosphere. 10th Annual WRF Users Workshop, Boulder, CO.

- *Lu, Y., **L. M. Kueppers**, *Z. M. Subin. 2009. Modeling the climate sensitivity to forest cover in North America. 10th Annual WRF Users Workshop, Boulder, CO.
- *Subin, Z. M., J. Jin, **L. M. Kueppers**, W. J. Riley, *D. M. Svehla, M. S. Torn. 2008. Ecosystem feedbacks to climate change in California: Integrated climate forcing from vegetation redistribution, using a new regional climate model configuration. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract GC51B-08.
- Kueppers, L. M.**, M. A. Snyder, and L. C. Sloan. 2006. Influence of land-use change on surface energy fluxes and atmospheric circulation in California, *Eos Transactions AGU*, 87(52), Fall Meet. Suppl., Abstract A41B-0041 (poster).
- Kueppers, L. M.**, M. A. Snyder, L. C. Sloan, and *S. Bryant. 2005. A regional climate modeling study of the effects of irrigation and urbanization on California climate. American Geophysical Union Fall Meeting. San Francisco, CA.
- Shellito, C. J., S. Clifhorne, L. C. Sloan, and **L. Kueppers**. 2005. Importance of soil texture in paleo-vegetation modeling studies. American Geophysical Union Fall Meeting. San Francisco, CA. (poster)
- Kueppers, L. M.**, M. A. Snyder, *S. Bryant, and L. C. Sloan. 2005. Climate effects of Irrigation and urbanization in California: A regional climate modeling study. Second Annual Climate Change Research Conference, and First Scientific Conference, West Coast Governors' Global Warming Initiative, Sacramento, CA. (poster)
- Snyder, M. A., **L. M. Kueppers**, L. C. Sloan, E. S. Zavaleta, and B. Fulfroost. 2005. Application of regional climate model output to the assessment of the impacts of climate change in California. Second Annual Climate Change Research Conference, and First Scientific Conference, West Coast Governors' Global Warming Initiative, Sacramento, CA. (poster)
- Kueppers, L. M.**, L. C. Sloan, M. A. Snyder, and E. S. Zavaleta. 2005. Endemic oaks, future climate change, and regional conservation. UCSC Plant Research Symposium, Santa Cruz, CA.
- Kueppers, L. M.**, L. C. Sloan, M. A. Snyder, and E. S. Zavaleta. 2004. Large shift in endemic oak ranges due to projected future regional climate change in California. *Eos, Transactions, American Geophysical Union*. (poster)
- Kueppers, L. M.** and J. Harte. 2004. Mountain forest carbon feedbacks to climate change: do species matter? Ecological Society of America Annual Meeting Abstracts.
- Kueppers, L. M.** 2004. Rocky Mountain forest carbon: The influence of climate and species. Department of Environmental Science, Policy and Management, University of California, Berkeley.
- Kueppers, L. M.** 2003. Climate and species controls on forest carbon dynamics in the Rocky Mountains. Global Change Education Program End-of-Summer Workshop. Arlington, VA.
- Kueppers, L. M.**, J. Southon, and J. Harte. 2002. Climate and species controls on decomposition of coarse woody debris: radiocarbon dating of decaying logs. Global Change Education Program End-of-Summer Workshop. Argonne National Laboratory, IL.
- Kueppers, L. M.**, J. Southon, and J. Harte. 2002. Climate and species controls on decomposition of coarse woody debris: radiocarbon dating of decaying logs. Ecological Society of America Annual Meeting Abstracts 87:185.

- Kueppers, L. M.** 2002. How do climate and forest type affect carbon storage and cycling rates: Coarse woody debris decomposition. Rocky Mountain Biological Laboratory, CO.
- Kueppers, L. M.**, and J. Harte. 2001. Soil carbon loss along a climate and forest type gradient in the Rocky Mountains. Ecological Society of America Annual Meeting Abstracts 86:135-136.
- Kueppers, L. M.**, and J. Harte. 2000. Soil carbon dynamics along a forest type and elevation gradient in the Rocky Mountains: Ecological feedbacks to climate change. Eos, Transactions, American Geophysical Union 81(48): F198. (poster)
- Kueppers, L. M.**, W. L. Silver, A. E. Lugo, and H. A. Mooney. 1996. The effects of canopy tree species diversity on nutrient cycling in a restored tropical moist forest. Bulletin of the Ecological Society of America, 77(3 Suppl. Part 2): 246. (poster)

Teaching

<i>Course (lower division, upper division or graduate)</i>	<i># students</i>	<i>Institution</i>	<i>Term</i>
Guest Lecturer, Energy and Resources Group	19	UC Berkeley	Fall 2014
Alpine Plant Ecology and Climate Change (g), 3 units	3	UC Merced	Spring 2012
Environmental Science and Policy (ud), 4 units (co-taught with Tony Westerling)	45	UC Merced	Spring 2012
Ecosystems of California (ld), 4 units	68	UC Merced	Spring 2012
Terrestrial Ecosystem Ecology (ud/g), 3 units	18	UC Merced	Fall 2011
Climate Change and Biodiversity (executive leadership program)	24	National Parks Institute	April 2011
Environmental Science and Policy (ud), 4 units (co-taught with Tony Westerling)	73	UC Merced	Spring 2011
Ecosystems of California (ld), 4 units	93	UC Merced	Spring 2011
Climate Change and Biodiversity (executive leadership program)	27	National Parks Institute	April 2010
Terrestrial Ecosystem Ecology (ud/g), 3 units	18	UC Merced	Spring 2010
Environmental Science and Policy (ud), 4 units (co-taught with Tony Westerling)	17	UC Merced	Spring 2010
Writing a Research Proposal (g), 2 units	15	UC Merced	Fall 2009
Active Service Modified Duties		UC Merced	Spring 2009
Active Service Modified Duties		UC Merced	Fall 2008
Ecosystems of California (ld), 4 units	49	UC Merced	Spring 2008
Environmental Science and Policy (ud), 4 units (co-taught with Tony Westerling)	39	UC Merced	Fall 2007
Terrestrial Ecosystem Ecology (ud/g), 3 units	3	UC Merced	Spring 2007
Rocky Mountain Ecosystems and Climate Change	4	Rocky Mountain Biological	Summer 2006

Guest Lecturer, Department of Environmental Science	Laboratory Western Washington University	Spring 2006
Guest Lecturer, Environmental Studies Department	UC Santa Cruz	2004, 2005

Visiting Scholars Hosted

Kaiguang Zhao 2011 Currently Assistant Professor, Ohio State University

Postdoctoral Scholars Mentored

Thomas Powell 2015-present

Justin Bagley 2015-present (co-mentored with Margaret Torn)

Erin Conlisk 2014-2016 Currently

Yaqiong Lu 2013-2015 Currently postdoc, NCAR

Andrew Moyes 2010-2014 Currently Research Associate, Lawrence Berkeley National
Laboratory

Ramona Butz 2007-2009 Currently Northern Province Ecologist for the Klamath, Mendocino,
Shasta-Trinity, and Six Rivers National Forests, U.S. Forest Service

PhD and MS Students

Meredith Jabis, (co-advised with J. Harte) 2012-present, PhD student, Environmental Science,
Policy and Management, UC Berkeley

Kaitlin Lubetkin (co-advised with A.L. Westerling) 2015, PhD, Environmental Systems, UC
Merced (currently field team lead, Great Basin Institute)

Yaqiong Lu 2013, PhD, Environmental Systems, UC Merced (currently postdoc, NCAR)

Miguel Fernandez (co-advised with H. Hamilton) 2013, PhD, Environmental Systems, UC
Merced (currently postdoc, German Centre for Integrative Biodiversity Research,
Leipzig)

Daniel Winkler 2013, MS, Environmental Systems, UC Merced (currently PhD student, UC
Irvine)

Jennifer Wolf 2011, MS Environmental Systems, UC Merced

Dissertation or masters committee member for James Kupihea (PhD student, UC Merced),
Alisa Keyser (PhD 2016, UC Merced), Danielle Christianson (PhD 2016, UC Berkeley),
Alyssa Carrell (2014 PhD, UC Merced), Chelsea Carey (PhD 2014, UC Merced), Steven Lee
(MS 2013, UC Merced), Andrew Zumkehr (MS 2013, UC Merced), Xianyu Yang (MS 2012,
UC Merced), Christine Lamana (2012 PhD, University of Arizona), Gyami Shrestha (2011
PhD, UC Merced), Jennifer Petrzela (2011 MS, University of Colorado, Boulder), Joan
Lehman (2010 MS, UC Merced), Patrick Rahilly (2008 MS, UC Merced).

Undergraduate Research Students (since 2008)

Dianne Quiroz, 2015, LBNL SULI program student (currently research assistant UC Merced)

Lucille Watkins, 2015, LBNL SULI program student (currently MS student University of
Florida)

Rick Thomas, 2014, LBNL SULI program student (currently MS student UC Santa Barbara)

Greg Vose, 2013, UC Merced REU Program student (currently PhD student, UC Irvine)
Alex Lau, 2012-2013, Cognitive Science graduate, UC Merced (currently at CBF Electric)
Melanie Wiederhold, 2012, University of Colorado REU Program student
Alan Hong, 2010-2012, Earth Systems Science graduate, UC Merced (MS, Cal State Fullerton)
Ana Becerril, 2011, Earth Systems Science graduate, UC Merced (currently staff, UC Merced)
Daniella Rodriguez, 2010, University of Colorado REU Program student
Renee Rozaieski, 2010, University of Colorado REU Program student (currently at Merion Mercy Academy)
Marc Wasserman, 2010, UC Merced REU Program student (currently at CLEAResult)
Ruth Xochihua, 2009-2010, Earth Systems Science graduate, UC Merced (currently at NSF International)
Alyssa Carrell, 2008-2009, Biological Sciences graduate, UC Merced (2014 PhD, UC Merced; currently postdoc Oak Ridge National Laboratory)

Professional Service and Workshops

2015-present Member Community Earth System Model Advisory Board
2016 Ecological Society of America, 2016 Annual Meeting, Fort Lauderdale, FL. Co-organizer, organized oral session titled *Novel Tropical Ecosystems: Response to Global Change*.
American Geophysical Union 2016 Fall Meeting, San Francisco, CA. Co-chair session titled *Blue and Green Water in the Mountains: Water Supply, Extreme Events, and Ecological Responses in Snow and Glacier-fed Catchments*.
2013-2015 Co-organizer Alpine and Arctic Treeline Ecotone Network (with Connie Millar, USFS, and David Cairns, TAMU)
2015 Co-organizer of DOE workshop on *Trait Methods for Representing Ecosystem Change*, Rockville, MD.
Participant in NSF Treeline Workshop *Identifying mechanisms driving treeline elevations*, McCall, Idaho.
Ecological Society of America, 2015 Annual Meeting, Baltimore, MD. Co-organizer, Ignite session titled *Ecology in Earth System Models: What's Missing and Why is it Important?*
2014 Participant in NSF workshop *INTERFACE: Using results from global change experiments to inform land model development and calibration*, Beijing, China
Ecological Society of America, 2014 Annual Meeting, Sacramento, CA. Co-organizer, oral session titled *Advancing Knowledge of Alpine and Arctic Treeline Ecotones and Responses to Environmental Change*
2012 Participant in NSF workshop *Climate Change and Species Interactions*, Cary Institute for Ecosystem Studies
Panelist for NSF CRI EaSM 2 special solicitation, Washington, DC
2009 Panelist for DOE Early Career Research Program 2010 Climate and Environmental Sciences Division, Washington DC
Participant in DOE/NSF workshop *Long-term Global Change Experiments*
Panelist on NSF Ecosystem DDIG Advisory Panel, Washington, DC
2008-2010 Participant in NCEAS working group *Linking carbon storage in terrestrial ecosystems with other climate forcing agents: A synthesis allowing for effective carbon dioxide stabilization policies*

- 2007-2009 American Geophysical Union, Biogeosciences Fall Meeting Program Committee
- 2008 Participant in DOE workshop *Exploring Science Needs for the Next Generation of Climate Change and Elevated CO₂ Experiments in Terrestrial Ecosystems*
- 2007 American Geophysical Union 2007 Fall Meeting, San Francisco, CA . Co-chair of session titled *Including Land Use and Land Cover Change in Earth System Models*
- 2006 American Geophysical Union 2006 Fall Meeting, San Francisco, CA . Co-chair of session titled *Modeling and Observation of Ecosystem, Carbon Cycle, and Energy System Feedbacks in the Earth's Climate*
- 2005 American Geophysical Union 2005 Fall Meeting, San Francisco, CA. Co-host of workshop titled *Observational Needs for Quantifying Ecosystem Feedbacks to Climate Change*
- 2004 Climate, Community & Biodiversity Alliance, Washington, DC. Reviewed draft Project Design Standards for identifying land-use carbon market projects with social and ecological co-benefits.
- 2000, 2005 Sound Science Initiative, Union of Concerned Scientists, Cambridge, MA. Reviewed draft report on Forest Carbon Storage as an Ecosystem Service. Met with California legislators during Climate Science Education Day, Sacramento, CA
- 2000 Director Search Committee, Rocky Mountain Biological Laboratory

Institutional Service

- 2016 Climate and Ecosystem Sciences Division Research Grand Challenges Committee, Dynamic Vegetation Modeler Research Scientist Search Committee, Environmental Microbial Genomics Research Scientist Search Committee, LBNL
- 2014, 2016 Early Career Grant Committee, Earth Sciences Division, LBNL
- 2015 Earth and Environmental Science Area “Eco-Climate” Division Working Group, Tropical Ecosystem Science Research Scientist Search Committee, LBNL
- 2011-2012 Admissions Committee, Environmental Systems graduate program, UC Merced
- 2009-2012 Earth Systems Science undergraduate degree program faculty lead, UC Merced
- 2009-2012 Ad hoc Working Group on Environmental Majors and Minors, UC Merced
- 2008-2012 UC Merced Representative on the White Mountain Research Station Advisory Committee
- 2008-2012 Faculty lead (joint with M. Sprague until 2010), El Capitan High Performance Computing Cluster, UC Merced
- 2007-2012 UC Merced Representative to the California Cooperative Ecosystems Study Unit
- 2010-2011 Ecology Search Committee, UC Merced
- 2010 Participation in Preview Day on behalf of the Earth Systems Science major, UC Merced
- 2008-2010 Chancellor’s Advisory Committee on the Status of Women, UC Merced
- 2009 Undergraduate Council, UC Merced
- 2008-2009 Ecology Search Committee, UC Merced
- 2007-2009 Natural Sciences Curriculum Committee, UC Merced

2008 Chair, Soil Biogeochemistry Search Committee, UC Merced
2008 Chair, Soil Physics Search Committee, UC Merced
2007-2008 Joint Ecology Search Committee (3 positions), UC Merced
2006-2007 Microbial Ecology Search Committee, UC Merced
2006-2007 Natural Sciences Academic Resource and Planning Committee, UC Merced

Public Service and Media

Ongoing UC Merced Faculty Expert
2015 Science in the Theater. Gave one of five scientific presentations to the public at Berkeley Repertory Theater event organized by Berkeley Lab
2011-2012 Secretary and Founding member, Sierra Foothill Charter School - a science and sustainability focused K-8 Charter School in Catheys Valley, CA
2011 DeSTRESS online media. Climate scientist featured in open-licensed educational video on uncertainty and climate change for Economics, Geography, Sociology and Politics students (<http://media.streamlearn.com/video/30208262>). BBC Radio. Feature piece on Alpine Treeline Warming Experiment. Crested Butte Magazine. Feature article written on GLORIA alpine ecology project
Sierra Nevada Research Institute Symposium. Presentation on species ranges shifts and climate change.
Robert Fore Excellence in Education, Yosemite National Park. Presentation to local high school science teachers regarding climate change and ecological consequences.
2010 RMBL Exploration Experiences Climate Change Tour. Spoke with visitors to the field research station on an organized hike regarding climate change and climate and ecology research.
KVPT television. Guest climate scientist on a climate change episode of *Great Valley*, a taped half hour informational program.
Denver Post interview on subalpine and alpine species range shifts with climate change (article reprinted in Contra Costa Times).
2009 KPFA Radio interview on climate change
Nature News article on new DOE funded warming experiments
2007 ScienceNOW, KERN and KXJZ (NPR) Radio, Merced Sun-Star, Fresno Bee, and others. Provided interviews for radio, newspaper, and online outlets on the climate impacts of irrigated agriculture in California.
2006 Co-mentor for two Lawrence Berkeley National Laboratory K-12 Teacher Interns
2005-2006 KQED (NPR), KGO (ABC), and BBC Radio, San Jose Mercury News. Provided interviews on climate change and oak habitat shifts in California, and on forest carbon cycle feedbacks to climate change in the Colorado Rocky Mountains.
2005 Eyewitness News, KPIX (CBS), San Francisco, CA. Television interview on climate change and oak habitat shifts in California
2002 Nature Notes, KBUT, Crested Butte, CO. One hour radio interview on climate change and forest ecosystems in the Rocky Mountains.

Reviewing (manuscripts, proposals, applications)

Nature; Global Change Biology; Ecology Letters; New Phytologist; Functional Ecology; Ecology; Ecological Applications; Oecologia; Oikos; Plant Ecology and Diversity; Arctic, Antarctic and Alpine Research; Journal of Arid Environments

Geophysical Research Letters, Environmental Research Letters, Climatic Change Letters, Climate Dynamics, Journal of Geophysical Research – Atmospheres, Journal of Climate, Global Biogeochemical Cycles, Water Resources Research, Journal of Hydrometeorology, Radiocarbon

NSF (Atmospheric Sciences, Environmental Biology, Ocean Sciences, Office of Polar Programs), USDA AFRI, DOE, California PIER Program, Netherlands Research Organization, Austrian Science Fund

DISCCRS V Workshop Applications, White Mountain Research Station Student Grants, Rocky Mountain Biological Laboratory Snyder Fellowship.

Professional Memberships

American Association for the Advancement of Science

American Geophysical Union

Ecological Society of America

Rocky Mountain Biological Laboratory