Kimberly J. La Pierre

Curriculum Vitae

Smithsonian Environmental Research Center
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Research Interests

community ecology; mutualisms; biodiversity; ecosystem function; grasslands; trophic interactions; invertebrates; plants; rhizobia; functional traits; global change – invasions, climate change, eutrophication, elevated CO_2, diversity loss

Education

2013	Ph.D., Ecology and Evolutionary Biology, Yale University *Advisor:* Melinda Smith; *Committee:* David Post, Os Schmitz, Kay Gross
2007	B.S., Ecology and Evolutionary Biology, University of California, Irvine

Professional Experience

2017-	Senior Scientist, Smithsonian Environmental Research Center (SERC), Edgewater, Maryland
2013-2017	Post-Doctoral Fellow, Berkeley Initiative for Global Change Biology (BiGCB), University of California, Berkeley
2004-2007	Undergraduate Research Associate, University of California, Irvine
2006	Research Intern, Island Conservation, Santa Cruz, CA

Grants and Fellowships **($1,030,493 plus tuition, fees, and travel grants)**

2016	NSF LTER Network Office/NCEAS. *Integrating plant community and ecosystem responses to chronic global change drivers: Toward an explanation of patterns and improved global predictions* (synthesis working group). $78,000. PIs: **KJ La Pierre**, ML Avolio, KR Wilcox
2015	Marin County Parks. *Unlocking the drivers of sustainable invasive legume management: Are rhizobial mutualists the key?* $10,000. PIs: **KJ La Pierre**, EL Simms
2015	NSF DEB - Population and Community Ecology. *Mutualism theory predicts how legumes influence biodiversity-ecosystem function relationships under global change.* $799,364. PI: EL Simms, Senior Scientist: **KJ La Pierre**
2012	NSF LTER Network Office. *Mechanisms of convergence and divergence: understanding the variability of plant community responses to multiple resource manipulations* (synthesis working group). $13,744. PIs: ML Avolio, **KJ La Pierre**
2012	Yale Institute for Biospheric Studies' Dissertation Improvement Grant. *Drivers of grassland invertebrate community structure: effects of soil nutrient availability*

	and vertebrate herbivores on invertebrate resource limitation. $5000. PI: **KJ La Pierre**
2011	Yale University, Lee Pierce Fund. *Drivers of grassland community structure: An assessment of the strength of bottom-up versus top-down control.* $3000. PI: **KJ La Pierre**
2010	NSF LTER Network Office. *The impacts of within season rainfall variability across ecosystems* (synthesis working group). $11,885. PIs: TMP Robinson, **KJ La Pierre**, ML Thomey
2009-2012	National Science Foundation Graduate Research Fellowship (NSF GRFP), $90,000 plus tuition and fees. PI: **KJ Komatsu***
2005, 2006, 2008	ESA, Strategies for Ecology Education, Development, and Sustainability Program (SEEDS) Travel Grant. PI: **KJ Komatsu***
2008	Yale Institute for Biospheric Studies' Center for Field Ecology Pilot Research Grant. *Effects of top-down and bottom-up forces on plant invasion in grassland ecosystems*. $2000. PI: **KJ Komatsu***
2005-2007	University of California Leadership Excellence through Advanced Degrees in the Sciences Program (UC LEADS) Fellowship, $15,000 Research Stipend plus travel and living expenses. PI: **KJ Komatsu***
2005	University of California, Irvine Summer Undergraduate Research Program (SURP). *The effects of herbivory on competition intensity in California grasslands*. $2000. PI: **KJ Komatsu***
2005	University of California, Irvine Undergraduate Research Opportunities Program (UROP). *Effects of herbivory by an exotic snail on the community composition of southern California grasslands*. $500. PI: **KJ Komatsu***

*last name changed from Komatsu to La Pierre in 2009

Peer-Reviewed Publications

32. **La Pierre, KJ**, Blumenthal, DM, Brown, CS, Klein, JA, Smith, MD. 2016. Drivers of variation in ANPP and plant community composition differ across a broad precipitation gradient. *Ecosystems*. 19 (3): 521-533.
31. **La Pierre, KJ**, Smith, MD. 2016. Soil nutrient additions increase invertebrate herbivore abundances, but not herbivory across three grassland systems. *Oecologia*. 180 (2): 485-497.
30. Harpole, WS and 32 others (including **KJ La Pierre**). 2016. Addition of multiple limiting resources reduces grassland diversity. *Nature*. 537 (7618): 93-96.
29. Zhu, C, Ma, Y, Wu, H, Sun, T, **La Pierre, KJ**, Sun, Z, Yu, Q. 2016. Divergent effects of nitrogen addition on soil respiration in a semiarid grassland. *Scientific Reports*. 6: 33541.
28. Long, M, Wu, H, Smith, MD, **La Pierre, KJ**, Lu, X, Zhang, H, Han, X, Yu, Q. 2016. Nitrogen deposition promotes phosphorus uptake of plants in a semi-arid temperate grassland. *Plant and Soil*. 408: 475-484.
27. Koerner, SK, Avolio, ML, **La Pierre, KJ**, Wilcox, KR, Smith, MD, Collins, SL. 2016. Nutrient additions cause divergence of tallgrass prairie plant communities resulting in loss of ecosystem stability. *Journal of Ecology*. 104: 1478-1487.

26. Flores-Moreno, H and 28 others (including **KJ La Pierre**). 2016. Climate modifies response of non-native and native species richness to nutrient enrichment. *Philosophical Transactions of the Royal Society B*. 371: 20150273.
25. Avolio, ML, **La Pierre, KJ**, Houseman, GR, Koerner, SE, Grman, E, Isbell, F, Johnson, DS, Wilcox, KR. 2015. A framework for quantifying the magnitude and variability of community responses to global change drivers. *Ecosphere*. 6 (12): 1-14.
24. **La Pierre, KJ**, Smith, MD. 2015. The role of plant traits and their plasticity in determining community and ecosystem responses to alterations in nutrient availability. *Plant Ecology*. 216 (2): 307-318.
23. **La Pierre, KJ**, Joern, A, Smith, MD. 2015. Invertebrate, not small vertebrate, herbivory interacts with nutrient availability to impact tallgrass prairie community composition and forb biomass. *Oikos*. 124 (7): 842-850.
22. Yu, Q, Wilcox, KR, **La Pierre, KJ**, Knapp, AK, Han, X, Smith, MD. 2015. Stoichiometric homeostasis predicts plant species dominance, temporal stability and responses to global change. *Ecology*. 96 (9): 2328-2335.
21. Leff, JW and 19 others (including **KJ La Pierre**). 2015. Consistent responses of soil microbial communities to elevated nutrient inputs in grasslands across the globe. *Proceedings of the National Academy of Sciences*. 112 (35): 10967-10972.
20. Seabloom, EW and 64 others (including **KJ La Pierre**). 2015. Plant species' origin predicts dominance and response to nutrient enrichment and herbivores in global grasslands. *Nature Communications*. 6: 7710.
19. Stevens, CJ and 23 others (including **KJ La Pierre**). 2015. Anthropogenic nitrogen deposition predicts local grassland primary production worldwide. *Ecology*. 96: 1459-1465.
18. Knapp, AK, Hoover, DL, Wilcox, KR, Avolio, ML, Koerner, SE, **La Pierre, KJ**, Loik, ME, Luo, Y, Sala, OE, Smith, MD. 2015. Characterizing differences in precipitation regimes of extreme wet and dry years: Implications for climate change experiments. *Global Change Biology*. 21 (7): 2624-2633.
17. Smith, MD, **La Pierre, KJ**, Collins, SL, Knapp, AK, Gross, KL, Barrett, JE, Frey, SD, Gough, L, Miller, RJ, Morris, JT, Rustad, LE, Yarie, J. 2015. Global environmental change and the nature of aboveground net primary productivity responses: Insights from long-term experiments. *Oecologia*. 177 (4): 935-947.
16. Knapp, AK, Carroll, CJW, Denton, EM, **La Pierre, KJ**, Collins, SL, Smith, MD. 2015. Differential sensitivity to regional-scale drought in six central U.S. grasslands. *Oecologia*. 177 (4): 949-957.
15. Prober, SM and 26 others (including **KJ La Pierre**). 2015. Plant diversity predicts beta but not alpha diversity of soil microbes across grasslands worldwide. *Ecology Letters*. 18 (1): 85-95.
14. Avolio, ML, Koerner, SE, **La Pierre, KJ**, Wilcox, KR, Wilson, GWT, Smith, MD, Collins, SL. 2014. Changes in plant community composition, not diversity, during a decade of nitrogen and phosphorus additions drive aboveground productivity in a tallgrass prairie. *Journal of Ecology*. 102 (6): 1649-1660.
13. Walsh, MR, **La Pierre, KJ**, Post, DM. 2014. Interactions between predation and resource quality drive life history evolution in natural populations of *Daphnia*. *Evolutionary Ecology*. 28 (2): 397-411.

12. Hautier and 32 others (including **KJ La Pierre**). 2014. Eutrophication weakens stabilizing effects of diversity in natural grasslands. *Nature*. 508: 521-525.
11. Borer, ET and 54 others (including **KJ La Pierre**). 2014. Herbivores and nutrients control grassland plant diversity via light limitation. *Nature*. 508: 517-520.
10. MacDougall, AS and 21 others (including **KJ La Pierre**). 2014. Anthropogenic-based regional-scale factors most consistently explain plot-level exotic diversity in grasslands on two continents. *Global Ecology and Biogeography*. 23 (7): 802-810.
9. Seabloom, ES and 72 others (including **KJ La Pierre**). 2013. Predicting invasion in grassland ecosystems: is exotic dominance the real embarrassment of richness? *Global Change Biology*. 19 (12): 3677-3687.
8. Robinson, TMP, **La Pierre, KJ**, Vadeboncoeur, MA, Byrne, KM, Thomey, ML, Colby, SE. 2012. Seasonal, not annual precipitation drives community productivity across ecosystems. *Oikos*. 122:727-738.
7. Knapp, AK, Smith, MD, Hobbie, SE, Collins, SL, Fahey, TJ, Hansen, GJA, Landis, DA, **La Pierre, KJ**, Melillo, JM, Seastedt, TR, Shaver, GR, Webster, JR. 2012. Past, present, and future roles of long-term experiments in the LTER network. *Bioscience*. 62 (4): 377-389.
6. **La Pierre, KJ**, Yuan, S, Chang, CC, Avolio, MA, Hallett, LM, Schreck, T, Smith, MD. 2011. Explaining temporal variation in aboveground productivity in a mesic grassland: the role of climate and flowering. *Journal of Ecology*. 99 (5): 1250-1262.
5. Grace, JB and 36 others (including **KJ La Pierre**). 2012. Response to comments on "Productivity is a poor predictor of plant species richness". *Science*. 335 (6075): 1441-1441.
4. Adler, PB and 54 others (including **KJ La Pierre**). 2011. Productivity is a poor predictor of plant species richness. *Science*. 333 (6050): 1750-1753.
3. Firn, J and 36 others (including **KJ La Pierre**). 2011. Abundance of introduced species at home predicts abundance away in herbaceous communities. *Ecology Letters*. 14:274-281.
2. **La Pierre, KJ**, Harpole, WS, Suding, KN. 2010. Strong feeding preference of an exotic generalist herbivore for an exotic forb: a case of invasional antagonism. *Biological Invasions*. 12 (9): 3025-3031.
1. **Komatsu, KJ***, Suding, KN. 2006. The effects of herbivory by an exotic snail on the community composition of southern California grasslands. *Journal of Undergraduate Research in the Biological Sciences*. 36: 795-806.

Edited Books and Chapters

Hanley, TC, **La Pierre, KJ**, eds. Trophic Ecology: Bottom-Up and Top-Down Interactions Across Aquatic and Terrestrial Systems. 2015. Cambridge University Press.

La Pierre, KJ, Hanley, TC. 2015. Bottom-up and top-down interactions across ecosystems in an era of global change. in TC Hanley and **KJ La Pierre** (eds): *Trophic Ecology: Bottom-Up and Top-Down Interactions Across Aquatic and Terrestrial Systems*. Cambridge University Press.

Datasets

La Pierre, KJ, Joern, A, Smith, MD. Effects of invertebrate and vertebrate herbivory on tallgrass prairie plant community composition and biomass, Konza Prairie LTER. doi:10.5072/FK2/41fd4cdc6d30cdcae7c4ffb27ba9d586

Awards and Honors

2012 G. Evelyn Hutchinson Memorial Award for Outstanding Oral Presentation

2006 Joseph H. Stevens Memorial Award for Outstanding Research in Ecology and Conservation

2006 West Coast Biological Sciences Award for Outstanding Poster Presentation

2006 aBetterEarth Environmental Essay, Third Prize

Organized Symposia and Workshops

2016 Ecological Society of America. Generalities and contingencies with multiple global change drivers: Diminishing effects or amplified consequences? (*Organized Oral Session*; organizers: SE Koerner, **KJ La Pierre**, ML Avolio)

2016 Ecological Society of America. Navigating NSF: The who, what, and when of the National Science Foundation (*Workshop*; organizers: **KJ La Pierre**, SE Koerner)

2015 LTER All Scientists Meeting. Community convergence or divergence in response to global change (*Workshop*; organizers: **KJ La Pierre**, SE Koerner, KR Wilcox)

2013 Ecological Society of America. The effects of climate change on community and ecosystem processes: lessons learned from the long-term ecological research (LTER) network (*Organized Oral Session*; organizer: **KJ La Pierre**)

2012 LTER All Scientists Meeting. Community convergence or divergence in resource manipulation experiments (*Workshop*; organizers: **KJ La Pierre**, SE Koerner, KR Wilcox)

2012 LTER All Scientists Meeting. Thinking outside the box: Integrating additional sciences into ecological research within the LTER network (*Graduate Student Symposium*; organizers: **KJ La Pierre**, SE Koerner)

2012 Ecological Society of America. Nutrient additions alter community and ecosystem processes: lessons learned from the long-term ecological research (LTER) network (*Organized Oral Session*; organizers: **KJ La Pierre**, SE Koerner)

2011 Ecological Society of America. Examining bottom-up and top-down forces: bringing together aquatic and terrestrial perspectives (*Organized Oral Session*; organizers: **KJ La Pierre**, TC Hanley)

Invited Presentations

2016 Cedar Creek Ecosystem Science Reserve

2015 Washington State University, Vancouver, Department of Biological Sciences

2015 University of California, Berkeley, Department of Integrative Biology

2009 Kansas State University, Division of Biology

Presentations

La Pierre, KJ, Avolio, ML, Isbell, FI, Lemoine, NP, Grman, E, Houseman, GR, Johnson, DS, Koerner, SK, Wilcox, KR. *Ecological Society of America* (2016). Plant community responses to multiple global change drivers: A synthesis examining the magnitude and variance of responses. (in OOS, *Generalities and Contingencies with Multiple Global Change Drivers: Diminishing Effects or Amplified Consequences?*)

La Pierre, KJ, Joern, A, Smith, MD. *Konza Prairie Biological Station LTER Workshop* (2016). Invertebrate herbivores structure grassland plant communities.

La Pierre, KJ, Porter, SS, Simms, EL. *Yosemite Symbiosis Symposium* (2016), *Joint Genome Institute Plant-Microbe Interaction Symposium* (2016). Are rhizobial mutualists the key to legume invasions?

La Pierre, KJ, Reich, PB, Hobbie, SE, Simms, EL. *LTER All Scientists Meeting* (2015). Effects of the legume-rhizobia mutualism on biodiversity-ecosystem function relationships under global change.

La Pierre, KJ, Avolio, ML, Isbell, FI, Grman, E, Houseman, GR, Johnson, DS, Koerner, SK, Wilcox, KR. *Ecological Society of America* (2015). Patterns of convergence and divergence: A meta-analysis of the variability of community responses to global change drivers.

La Pierre, KJ, Porter, SS, Simms, EL. *California Invasive Plant Council* (2014). Invasive legume symbioses: Do California invasions follow worldwide trends?

La Pierre, KJ, Porter, SS, Simms, EL. *Ecological Society of America* (2014). Unlocking the mechanisms behind legume invasions: Are rhizobial mutualists the key?

La Pierre, KJ, Smith, MD. *Ecological Society of America* (2013), *LTER All Scientists Meeting* (2012). Drivers of grassland invertebrate community structure: effects of soil nutrient availability on invertebrate resource limitation.

La Pierre, KJ, Smith, MD. *Ecological Society of America* (2012), *Grasslands in a Global Context* (2011). The role of plant traits and their plasticity in determining community and ecosystem responses to alteration in nutrient availability.

La Pierre, KJ, Smith, MD. *Ecological Society of America* (2011). The interactive effects of bottom-up and top-down forces vary across a broad grassland productivity gradient (in OOS, *Examining bottom-up and top-down forces: bringing together aquatic and terrestrial perspectives*)

La Pierre, KJ, Blumenthal, D, Brown, CS, Klein, J, Smith, MD. *Ecological Society of America* (2010), *Konza Prairie Biological Station LTER Workshop* (2010). Dominant plant species determine ecosystem response to multiple resource additions across a precipitation gradient.

La Pierre, KJ, Blumenthal, D, Brown, CS, Klein, J, Smith, MD. *LTER All Scientists Meeting* (2009). Drivers of grassland community structure: an assessment of the strength of bottom-up and top-down controls.

Komatsu, KJ*, Yuan, S, Chang, CC, Avolio, ML, Smith, MD. *Ecological Society of America* (2009). Climate and flower production determine above-ground net primary production in a C_4 grassland.

Komatsu, KJ*, Smith, MD. *Konza Prairie Biological Station LTER Workshop* (2009). Drivers of grassland community structure and woody encroachment: an assessment of the strength of bottom-up versus top-down controls.

Komatsu, KJ*, McGray, HG, Suding, KN. *Ecological Society of America* (2008). Invasion increases activities of soil microbial extracellular enzymes involved in carbon and nitrogen processing in Coastal Sage Scrub.

Komatsu, KJ*, Tershy, BR. *University of California Leadership Excellence through Advanced Degrees in the Sciences Annual Symposium* (2007). Stopping extinctions on islands.

Komatsu, KJ*, Harpole, WS, Suding, KN. *Ecological Society of America* (2006). The role of an exotic herbivore in determining the invasion success of *Brassica nigra* to southern California grasslands.

Komatsu, KJ*, Harpole, WS, Suding, KN. *West Coast Biological Sciences Undergraduate Research Conference* (2006), *Undergraduate Research Opportunities Program Symposium, University of California, Irvine* (2006). The effects of herbivory by an exotic snail on the community composition of southern California grasslands.

Komatsu, KJ*, Harpole, WS, Suding, KN. *University of California Leadership Excellence through Advanced Degrees in the Sciences Annual Symposium* (2006). The effects of herbivory by an exotic snail on the exotic forb *Brassica nigra*.

Service

2016-present	Advisory Board Member and Opt-In Project Coordinator, The Nutrient Network
2016	Fellowship Mentor, UC Berkeley Biology Scholars Program
2016	Fellowship Mentor, ESA, Strategies for Ecology Education, Development, and Sustainability (SEEDS) Program
2015-2016	Meeting Mentor, ESA, SEEDS Program
2014-2016	Scientist Participant, Oakland Unified School District, Dinner with a Scientist
2014-2016	Judge ESA Buell-Braun Awards
2010-2013	Graduate Student Co-Chair, Long-Term Ecological Research (LTER) Network
2009-2011	Reading Tutor, New Haven Reads, New Haven, CT
2009	Tutoring Coordinator for the Sciences, Wilbur Cross High School, New Haven, CT
2008-2009	Honors Science Curriculum Development, Wilbur Cross High School, New Haven, CT
2008	Alumni Mentor, ESA, SEEDS Program

Grant Reviews for National Science Foundation (ad hoc and panel reviewer); ESA SEEDS annual field-trip travel grant

Fellowship Reviews for University of California, Berkeley Miller Fellowship

Journal Reviews (60+ manuscripts/revisions) for African Journal of Range and Forage Science, Ecological Applications, Ecology, Ecology Letters, Ecosphere, Ecosystems, Frontiers, Functional Ecology, Functional Plant Biology, Global Biogeochemical Cycles, Global Change Biology, Journal of Applied Ecology, Journal of Arid Environments, Journal of Ecology, Journal of Molluscan Studies, Journal of Plant Ecology, Journal of Vegetation Science, Land Degradation and Development, Nature Ecology and Evolution, New Phytologist, Oecologia,

Oikos, Plant and Soil, Plant Ecology, PLoS ONE, Population Ecology, Proceedings of the Royal Society: Biology, Restoration Ecology

Mentoring Experience

Anthony Pham, UC Berkeley Biology Scholars Program, Biology Fellows Program fellow (2016-2017); UC Berkeley Integrative Biology undergraduate honors thesis (2016-2017)
Huy Ha, UC Berkeley Biology Scholars Program, Program for Early Researchers fellow (2016-2017)
Chelsea Hazlett, ESA Strategies for Ecology Education, Development, and Sustainability (SEEDS) fellow (2016)
Michael Paap, UC Berkeley Integrative Biology undergraduate honors thesis (2014-2015)
Sryia Maram, high school student (2014)
Arjun Potter, Research Experience for Undergraduates (REU) (2011)

Teaching Experience

2012	Plant Diversity and Evolution, Teaching Fellow, Yale University
	Plant Diversity and Evolution Laboratory, Teaching Fellow, Yale University
2009	Terrestrial Arthropods, Teaching Fellow, Yale University
	Terrestrial Arthropods Laboratory, Teaching Fellow, Yale University
	Diversity of Life Laboratory, Teaching Fellow, Yale University
2008	General Ecology, Teaching Fellow, Yale University
	Introduction to Evolution, Ecology, and Behavior, Teaching Fellow, Yale University

Professional Affiliations and Activities

Memberships

Ecological Society of America

Working Groups

ongoing	Linking community and ecosystem responses to global change drivers (C2E), LTER (***organizer***)
ongoing	Community Responses to Resource Experiments (CoRRE), LTER (***organizer***)
ongoing	Biodiversity and Productivity, LTER (*participant*)
ongoing	Community Dynamics: Toolkits for Analysis and Workflow, NCEAS (*participant*)
ongoing	Species Interactions and Global Change (SIGC), BiGCB (*participant*)
ongoing	Community Responses to Extreme Climatic Events, LTER (*participant*)
ongoing	The Nutrient Network, NSF (*advisory board member*, *site coordinator*)
2013	Ecosystem Sensitivity to Rainfall Experiments, LTER (*participant*)
2011-2012	Ecosystem Responses to Chronic Resource Manipulations, LTER (*participant*)
2009-2011	Seasonal Rainfall Variability across Ecosystems, LTER (***organizer***)