

# Kimberly J. Komatsu

## *Curriculum Vitae*

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\*last name changed from La Pierre to Komatsu in 2019

### 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

### Positions Held

- 2022-present Florence Schaeffer Distinguished Scholar of Science, Associate Professor,  
Department of Biology, University of North Carolina, Greensboro
- 2017-2022 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

### Competitive Grants (*totals:* \$4,386,107 research [\$2,384,072 to home institution]; \$343,499 synthesis working groups)

- 2022 Smithsonian Scholarly Studies. *Characterizing legume-rhizobia interaction networks to infer mechanisms underlying species coexistence and ecosystem function*. \$36,180. PI: **KJ Komatsu**
- 2022 Smithsonian Scholarly Studies. *Fossil and Future Atmospheres*. \$75,000 [\$30,070 to home institution]. PIs: R Barclay, **KJ Komatsu**, S Wing
- 2021 NSF DEB - Population and Community Ecology. *Collaborative Research: Microbiome mediation of multi-trophic interactions in a tree diversity experiment*. \$972,971 [\$448,388 to home institution]. PIs: M McCormick, **KJ Komatsu**, JD Parker, KT Burghardt, E Griffin
- 2021 Working Land and Seascapes Amplification and Innovation Fund. *Bridging Smithsonian science with community partners to enhance conservation opportunities for native biodiversity — a case for grassland birds*. \$55,000. PIs: AE Johnson, **KJ Komatsu**, M Ogburn, R Bennett, G Connette
- 2020 Working Land and Seascapes Amplification and Innovation Fund. *Bridging the land-sea interface: Chesapeake Bay as a model ecosystem for conservation science, partnerships, and actions*. \$96,219. PIs: **KJ Komatsu**, AE Johnson, I Lacher, M Ogburn
- 2020 USDA AFRI Bioenergy, Natural Resources, and Environment. *Assessing impacts of patch-burn grazing management on sustainability of multiple agroecosystem services*.

- \$499,388 [\$78,661 to home institution]. PIs: SE Koerner, ML Avolio, **KJ Komatsu**, KR Wilcox, L Zeglin
- 2020 NSF Long-Term Ecological Research. *Konza Prairie LTER VIII*. \$35,985 to home institution. PI: J Nippert, Senior Scientist: **KJ Komatsu**, et al
- 2019 sDiv. *sCoRRE: Assessing functional consequences of community changes with global change using trait-based and phylogenetic approaches* (synthesis working group). \$239,870. PIs: ML Avolio, **KJ La Pierre**
- 2019 USDA AFRI Foundational Knowledge of Agricultural Production Systems. *Safeguarding Soybeans Against Climate Change: Identifying the Role of Rhizobial Diversity in Moderating Drought and Herbivore Stress*. \$500,000. PIs: **KJ La Pierre**, KT Burghardt, JD Parker
- 2019 Working Land and Seascapes Amplification and Innovation Fund. *Chesapeake Bay Working Land and Seascapes*. \$120,000. PIs: **KJ La Pierre**, M Ogburn
- 2018 USDA AFRI Resilient Agroecosystems in a Changing Climate. *Identifying mechanisms of rangeland drought resilience: Management strategies for sustainable ecosystem health*. \$1,186,000 [\$174,205 to home institution]. PIs: SE Koerner, **KJ La Pierre**, L Porensky, K Reinhart, M Van Emon, KR Wilcox
- 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**
- 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

## Peer-Reviewed Publications

78. **Komatsu, KJ**, Esch, NL, Bloodworth, KJ, Burghardt, KT, McGurrin, K, Pullen, JD, Parker, JD. 2023. Rhizobial diversity impacts soybean resistance, but not tolerance, to herbivory during drought. *Basic and Applied Ecology*. 66: 31-39. <https://doi.org/10.1016/j.baae.2022.12.004>
77. Muehleisen, AJ and 31 others (including **KJ Komatsu**). *in press*. Nutrient addition drives declines in grassland species richness primarily via enhanced species loss. *Journal of Ecology*. <https://doi.org/10.1111/1365-2745.14038>
76. Halpern, BS, Boettiger, C, Dietze, MC, Gephart, JA, Gonzalez, P, Grimm, NB, Groffman, PM, Gurevitch, J, Hobbie, SE, **Komatsu, KJ**, Kroeker, KJ, Lahr, HJ, Lodge, DM, Lortie, CJ,

- Lowndes, JSS, Michelli, F, Possingham, HP, Ruckelshaus, MH, Scarborough, C, Wu, GC, Lancaster, L. 2023. Priorities for synthesis in ecology and environmental science. *Ecosphere*. 14 (1): e4342. <http://doi.org/10.1002/ecs2.4342>
75. Isbell, F and 65 others (including **KJ Komatsu**). *in press*. Expert perspectives on global biodiversity loss and its drivers and impacts on people. *Frontiers in Ecology and the Environment*. <https://doi.org/10.1002/fee.2536>
74. Ladouceur, E and 42 others (including **KJ Komatsu**). 2022. Linking changes in species composition and biomass in a globally distributed grassland experiment. *Ecology Letters*. 25 (12): 2699-2712. <https://doi.org/10.1111/ele.14126>
73. Reinhart, KO, **Komatsu, KJ**, Vermeire, LT. 2022. Effects of mowing, spring precipitation, soil nutrients, and enzymes on grassland productivity. *Agrosystems, Geosciences & Environment*. 5 (4): e20320. <https://doi.org/10.1002/agg2.20320>
72. Smith, MD, Koerner, SE, Avolio, ML, **Komatsu, KJ**, Eby, S, Forrestel, E, Collins, SL, Wilcox, KR, Ahumada, R, Morgan, JW, Olivia, G, Onatibia, GR, Overbeck, GE, Peter, G, Quiroga, E, Sankaran, M, Wu, J, Yahdjian, L, Yu, Q. 2022. Richness, not evenness, varies across water availability gradients in grassy biomes on five continents. *Oecologia*. 199: 649-659. <https://doi.org/10.1007/s00442-022-05208-6>
71. Avolio, MA, **Komatsu, KJ**, Koerner, SE, Grman, E, Isbell, F, Johnson, DS, Wilcox, KR, Alatalo, JM, Baldwin, AH, Beierkuhnlein, C, Britton, AJ, Foster, BL, Harmens, H, Kern, CC, Li, W, McLaren, JR, Reich, PB, Souza, L, Yu, Q, Zhang, Y. 2022. Making sense of multivariate community responses in global change experiments. *Ecosphere*. 13 (10): e4249 <https://doi.org/10.1002/ecs2.4249>
70. Langley, JA, Grman, E, Wilcox, KW, Avolio, MA, **Komatsu, KJ**, Collins, SL, Koerner, SE, Smith, MD, Baldwin, AH, Bowman, W, Chiariello, N, Eskelinen, A, Harmens, H, Hovenden, M, Klanderud, K, McCulley, RL, Onipchenko, VG, Robinson, CH, Suding, KN. 2022. Do trade-offs govern plant species' responses to different global change treatments? *Ecology*. 103 (6): e3626. <https://doi.org/10.1002/ecy.3626>
69. Hruska, A, Cawood, A, Pagenkopp Lohan, KM, Ogburn, MB, **Komatsu, KJ**. 2022. Going remote: Recommendations for normalizing virtual internships to promote diversity and inclusivity. *Ecosphere*. 13 (3): e3961. <https://doi.org/10.1002/ecs2.3961>
68. Carroll, O and 29 others (including **KJ Komatsu**). 2022. Nutrient identity modifies the destabilizing effects of eutrophication in grasslands. *Ecology Letters*. 25 (4): 754-765. <https://doi.org/10.1111/ele.13946>
67. Shamon, H and 31 others (including **KJ Komatsu**). 2022. The potential of bison restoration as an ecological approach to future tribal food sovereignty on the Northern Great Plains. *Frontiers in Ecology and Evolution*. 10: 826282. <https://doi.org/10.3389/fevo.2022.826282>
66. Canty, SWJ, Nowakowski, AJ, Connette, GM, Deichmann, JL, Songer, M, Chiaravalloti, R, Dodge, M, Feistner, ATC, Fergus, C, Hall, JS, **Komatsu, KJ**, Linares-Palomino, R, McField, M, Ogburn, MB, Velez-Zuazo, X, Akre, TS. 2022. Mapping a conservation research network to the Sustainable Development Goals. *Conservation Science and Practice*. e12731. <https://doi.org/10.1111/csp2.12731>
65. Ebling, A and 27 others (including **KJ Komatsu**). 2022. Nutrient enrichment increases invertebrate herbivory and pathogen damage in grasslands. *Journal of Ecology*. 110 (2): 327-339. <https://doi.org/10.1111/1365-2745.13801>

64. Arnillas, CA and 21 others (including **KJ Komatsu**). 2021. Opposing community assembly patterns for dominant and non-dominant plant species in herbaceous ecosystems globally. *Ecology and Evolution*. 11 (24): 17744-17761. <https://doi.org/10.1002/ece3.8266>
63. Wilfahrt, PA and 34 others including (**KJ Komatsu**). 2021. Temporal rarity is a better predictor of local extinction risk than spatial rarity. *Ecology*. e03504. <https://doi.org/10.1002/ecy.3504>
62. O'Connor, MI, Mori, AK, Gonzalez, A, Dee, LE, Loreau, M, Avolio, M, Byrnes, JEK, Cheung, W, Cowles, J, Clark, AT, Hautier, Y, Hector, A, **Komatsu, KJ**, Newbold, T, Outhwaite, CL, Reich, PB, Seabloom, E, Williams, L, Wright, A, Isbell, F. 2021. Grand challenges in biodiversity-ecosystem function research in the era of science-policy platforms require explicit considerations of feedbacks. *Proceedings of the Royal Society B*. 288 (1960): e20210783. <https://doi.org/10.1098/rspb.2021.0783>
61. Avolio, MA, **Komatsu, KJ** and 26 others. 2021. Determinants of community compositional change are equally affected by global change. *Ecology Letters*. 24 (9): 1892-1904. <https://doi.org/10.1111/ele.13824>
60. Tognetti, PM and 28 others (including **KJ Komatsu**). 2021. Negative effects of nitrogen override positive effects of phosphorus on grassland legumes worldwide. *Proceedings of the National Academy of Sciences*. 118 (28): e2023718118. <https://doi.org/10.1073/pnas.2023718118>
59. Gray, J, **Komatsu, KJ**, Smith, MD. 2021. Defining codominance in plant communities. *New Phytologist*. 230 (5): 1716-1730. <https://doi.org/10.1111/nph.17253>
58. Seabloom, E and 28 others (including **KJ Komatsu**). 2021. Increasing effects of chronic nutrient enrichment on plant diversity loss and ecosystem productivity over time. *Ecology*. 102 (2): e03218. <https://doi.org/10.1002/ecy.3218>
57. Wilcox, KR, **Komatsu, KJ**, Avolio ML, and the C2E Consortium. 2020. Improving collaborations between empiricists and modelers to advance grassland community dynamics in ecosystem models. *New Phytologist*. 228 (5): 1467-1471. <https://doi.org/10.1111/nph.16900>
56. Avolio, MA, Wilcox, KR, **Komatsu, KJ**, Lemoine, N, Bowman, WD, Collins, SL, Knapp, A, Koerner, SE, Smith, MD, Baer, S, Gross, KL, Isbell, F, McLaren, J, Reich, P, Suding, KN, Suttle, KB, Tilman, D, Xu, Z, Yu, Q. 2020. Temporal variability in production is not consistently affected by global change drivers across herbaceous-dominated ecosystems. *Oecologia*. 194 (4): 735-744. <https://doi.org/10.1007/s00442-020-04787-6>
55. **Komatsu, KJ**, Simms, EL. 2020. Invasive legume management strategies differentially impact mutualist abundance and benefit to native and invasive hosts. *Restoration Ecology*. 28 (2): 378-386. <https://doi.org/10.1111/rec.13081>
54. Bloodworth, KJ, Ritchie, ME, **Komatsu, KJ**. 2020. Effects of white-tailed deer exclusion on the plant community composition of an upland tallgrass prairie ecosystem. *Journal of Vegetation Science*. 31 (5): 899-907. <https://doi.org/10.1111/jvs.12910>
53. Taylor, BN, Simms, EL, **Komatsu, KJ**. 2020. More Than a Functional Group: Diversity within the Legume–Rhizobia Mutualism and Its Relationship with Ecosystem Function. *Diversity*. 12 (2): 50. <https://doi.org/10.3390/d12020050> (in Special Issue: *Symbioses and the Biodiversity-Ecosystem Function Relationship*)

52. Borer, E and 34 others (including **KJ Komatsu**). 2020. Nutrients cause grassland biomass to outpace herbivory. *Nature Communications*. 11 (6036). <https://doi.org/10.1038/s41467-020-19870-y>
51. Hautier, Y and 51 others (including **KJ Komatsu**). 2020. General destabilizing effects of eutrophication on grassland productivity at multiple spatial scales. *Nature Communications*. 11 (5375). <https://doi.org/10.1038/s41467-020-19252-4>
50. Smith, MD, Koerner, SE, Knapp, AK, Avolio, MA, Chaves, FA, Denton, EM, Dietrich, J, Gibson, DJ, Gray, J, Hoffman, AM, Hoover, DL, **Komatsu, KJ**, Silletti, A, Wilcox, KR, Yu, Q, Blair, M. 2020. Mass ratio effects underlie ecosystem responses to environmental change. *Journal of Ecology*. 108 (3): 855-864. <https://doi.org/10.1111/1365-2745.13330>
49. Broadbent, AAD and 23 others (including **KJ Komatsu**). 2020. Dominant native and non-native graminoids differ in key leaf traits irrespective of nutrient availability. *Global Ecology and Biogeography*. 29 (7): 1126-1138. <https://doi.org/10.1111/geb.13092>
48. Kattge, J and 728 others (including **KJ Komatsu**). 2020. TRY plant trait database – enhanced coverage and open access. *Global Change Biology*. 26: 119-188. <https://doi.org/10.1111/gcb.14904>
47. Avolio, ML, Carroll, IT, Collins, SL, Houseman, GR, Hallett, LM, Isbell, F, Koerner, SE, **Komatsu, KJ**, Smith, MD, Wilcox, KR. 2019. A comprehensive approach to analyzing community dynamics using rank abundance curves. *Ecosphere*. 10 (10): e02881. <https://doi.org/10.1002/ecs2.2881>
46. **Komatsu, KJ** and 75 others. 2019. Global change effects on plant communities are magnified by time and the number of global change factors imposed. *Proceeding of the National Academy of Sciences*. 116 (36): 17867-17873. <https://doi.org/10.1073/pnas.1819027116>
45. Seabloom, EW, Condon, B, Kinkel, L, **Komatsu, KJ**, Lumibao, CY, May, G, McCulley, RL, Borer, ET. 2019. Effects of nutrient supply, herbivory, and host community on fungal endophyte diversity. *Ecology*. 100 (9): e02758. <https://doi.org/10.1002/ecy.2758>
44. Borer, E, Lind, E, Firn, J, Seabloom, E, Anderson, TM, Bakker, E, Biederman, L, **La Pierre, KJ**, MacDougall, A, Moore, J, Risch, A, Schuetz, M, Stevens, C. 2019. More salt, please: global patterns, responses, and impacts of foliar sodium in grasslands. *Ecology Letters*. 22 (7): 1136-1144. <https://doi.org/10.1111/ele.13270>
43. Avolio, ML, Forrester, EJ, Chang, CC, **La Pierre, KJ**, Burghardt, KT, Smith, MD. 2019. Tansley review: Demystifying dominant species. *New Phytologist*. 223 (3): 1106-1126. <https://doi.org/10.1111/nph.15789>
42. Cleland, EE and 34 others (including **KJ La Pierre**). 2019. Belowground biomass response to nutrient enrichment depends on light limitation across globally distributed grasslands. *Ecosystems*. 22 (7): 1466-1477. <https://doi.org/10.1007/s10021-019-00350-4>
41. Firn, J and 42 others (including **KJ La Pierre**). 2019. Leaf nutrients, not specific leaf area, are consistent indicators of elevated nutrient inputs. *Nature Ecology and Evolution*. 3: 400-406. <https://doi.org/10.1038/s41559-018-0790-1>
40. Langley, JA, Chapman, SK, **La Pierre, KJ**, Avolio, ML, Bowman, WD, Johnson, DS, Isbell, F, Wilcox, KR, Foster, BL, Hovenden, MJ, Knapp, AK, Koerner, SE, Lortie, CJ, Magonigal, JP, Newton, PCD, Reich, PB, Smith, MD, Suttle, KB, Tilman, D. 2018. Ambient changes

- exceed treatment effects on plant species abundance in global change experiments. *Global Change Biology*. 24 (12): 5668-5679. <https://doi.org/10.1111/gcb.14442>
39. Hodapp, D and 30 others (including **KJ La Pierre**). 2018. Spatial heterogeneity in species composition constrains plant community responses to herbivory and fertilization. *Ecology Letters*. <https://doi.org/10.1111/ele.13102>
  38. Collins, SL, Avolio, ML, Gries, C, Hallett, LM, Koerner, SE, **La Pierre, KJ**, Rypel, AL, Sokol, ER, Fey, SB, Flynn, DFB, Jones, SK, Ladwig, LM, Ripplinger, J, Jones, MB. 2018. Temporal heterogeneity increases with spatial heterogeneity in ecological communities. *Ecology*. 99 (4): 858-865. <https://doi.org/10.1002/ecy.2154>
  37. Hautier, Y and 37 others (including **KJ La Pierre**). 2018. Local loss and spatial homogenization of plant diversity reduce ecosystem multifunctionality. *Nature Ecology and Evolution*. 2: 50-56. <https://doi.org/10.1038/s41559-017-0395-0>
  36. **La Pierre, KJ**, Simms, EL, Tariq, M, Zafar, M, Porter, SS. 2018. Invasive legumes can associate with many mutualists of native legumes, but usually do not. *Ecology and Evolution*. 7 (20): 8599-8611. <https://doi.org/10.1002/ece3.3310>
  35. Wilcox, KR and 44 others (including **KJ La Pierre**). 2017. Asynchrony among local communities stabilizes ecosystem function of metacommunities. *Ecology Letters*. 20 (12): 1534-1545. <https://doi.org/10.1111/ele.12861>
  34. Lind, EL, **La Pierre, KJ**, Seabloom, EW, Alberti, J, Iribarne, O, Firn, J, Gruner, DS, Kay, AD, Pascal, J, Wright, JP, Yang, L, Borer, ET. 2017. Increased grassland arthropod production with mammalian herbivory and eutrophication: A test of mediation pathways. *Ecology*. 98 (12): 3022-3033. <https://doi.org/10.1002/ecy.2029>
  33. Harpole, WS and 25 others (including **KJ La Pierre**). 2017. Out of the shadows: multiple nutrient limitations drive relationships among biomass, light, and plant diversity. *Functional Ecology*. 31: 1839-1846. <https://doi.org/10.1111/1365-2435.12967>
  32. Biederman, L, Mortensen, B, Fay, P, Hagenah, N, Knops, J, **La Pierre, KJ**, Laungani, R, Lind, E, McCulley, R, Power, S, Seabloom, EW, Tognetti, P. 2017. Nutrient addition shifts plant community composition towards earlier flowering species in some prairie ecoregions in the US Central Plains. *PloS One*. 12 (5): e0178440. <https://doi.org/10.1371/journal.pone.0178440>
  31. **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. <https://dx.doi.org/10.1007/s10021-015-9949-7>
  30. **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. <https://dx.doi.org/10.1007/s00442-015-3471-7>
  29. Harpole, WS and 32 others (including **KJ La Pierre**). 2016. Addition of multiple limiting resources reduces grassland diversity. *Nature*. 537 (7618): 93-96. <https://dx.doi.org/10.1038/nature19324>
  28. 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. <https://dx.doi.org/10.1038/srep33541>

27. 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. <https://doi.org/10.1007/s11104-016-3022-y>
26. 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. <https://dx.doi.org/10.1111/1365-2745.12610>
25. 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. <https://dx.doi.org/10.1098/rstb.2015.0273>
24. 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. <https://dx.doi.org/10.1890/ES15-00317.1>
23. **La Pierre, KJ**, Smith, MD. 2015. Functional trait expression of grassland species shift with short- and long-term nutrient additions. *Plant Ecology*. 216 (2): 307-318. <https://dx.doi.org/10.1007/s11258-014-0438-4>
22. **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. <https://dx.doi.org/10.1111/oik.01869>
21. 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. <https://dx.doi.org/10.1890/14-1897.1>
20. 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. <https://dx.doi.org/10.1073/pnas.1508382112>
19. 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. <https://dx.doi.org/10.1038/ncomms8710>
18. Stevens, CJ and 23 others (including **KJ La Pierre**). 2015. Anthropogenic nitrogen deposition predicts local grassland primary production worldwide. *Ecology*. 96: 1459-1465. <https://doi.org/10.1890/14-1902.1>
17. 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. <https://dx.doi.org/10.1111/gcb.12888>
16. 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. <https://dx.doi.org/10.1007/s00442-015-3230-9>

15. 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. <https://dx.doi.org/10.1007/s00442-015-3233-6>
14. 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. <https://dx.doi.org/10.1111/ele.12381>
13. 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. <https://dx.doi.org/10.1111/1365-2745.12312>
12. 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. <https://dx.doi.org/10.1007/s10682-013-9666-7>
11. Hautier and 32 others (including **KJ La Pierre**). 2014. Eutrophication weakens stabilizing effects of diversity in natural grasslands. *Nature*. 508: 521-525. <https://dx.doi.org/10.1038/nature13014>
10. Borer, ET and 54 others (including **KJ La Pierre**). 2014. Herbivores and nutrients control grassland plant diversity via light limitation. *Nature*. 508: 517-520. <https://dx.doi.org/10.1038/nature13144>
9. 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. <https://dx.doi.org/10.1111/geb.12157>
8. 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. <https://dx.doi.org/10.1111/gcb.12370>
7. 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. <https://dx.doi.org/10.1111/j.1600-0706.2012.20655.x>
6. 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. <https://dx.doi.org/10.1525/bio.2012.62.4.9>
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. <https://dx.doi.org/10.1126/science.1214939>
4. **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. <https://dx.doi.org/10.1111/j.1365-2745.2011.01844.x>
3. Adler, PB and 54 others (including **KJ La Pierre**). 2011. Productivity is a poor predictor of plant species richness. *Science*. 333 (6050): 1750-1753. <https://dx.doi.org/10.1126/science.1204498>



2. 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. <https://dx.doi.org/10.1111/j.1461-0248.2010.01584.x>
1. **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. <https://doi.org/10.1007/s10530-010-9693-z>

## Edited Books and Chapters, Special Issues

**Komatsu, KJ**, Taylor, BN, eds. Special Issue: Symbioses and the Biodiversity-Ecosystem Function Relationship. 2020. *Diversity*.

Hanley, TC, **La Pierre, KJ**, eds. Trophic Ecology: Bottom-Up and Top-Down Interactions Across Aquatic and Terrestrial Systems. 2015. Cambridge University Press. <http://www.worldcat.org/isbn/9781316309735>

**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

**Komatsu, KJ**, Esch, N, Bloodworth, KJ, Pullen, J, Parker, JP. Soybean growth, yield, and insect resistance in response to rhizobial diversity and drought. <https://doi.org/10.25573/serc.21668132.v1>

**Komatsu, KJ**, Avolio, MA, Hope, A, Koerner, SE, Louthan, A, Wilcox, KR. The Consumer Size Manipulation Experiment (conSME) at Konza Prairie. <https://doi.org/10.6073/pasta/5e27751f4a453aa7f57ffcb073740bbd>

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

**La Pierre, KJ**, Smith, MD. Nutrient Network: Investigating the roles of nutrient availability and vertebrate herbivory on grassland structure and function at Konza Prairie. <https://doi.org/10.6073/pasta/32f60e91bfeb5fc6d198d05f56ac7ee1>

**La Pierre, KJ**. Dataset 309: Plant traits of grassland species. in TRY Plant Database version 4.

**La Pierre, KJ**, Simms, EL, Tariq, M, Zafar, M, Porter, SS. 2017. Data from: Invasive legumes can associate with many mutualists of native legumes, but usually do not. Dryad Digital Repository. <https://doi.org/10.5061/dryad.m86s6>

**La Pierre, KJ**, Simms, EL, Tariq, M, Zafar, M, Porter, SS. 2017. Data from: Invasive legumes can associate with many mutualists of native legumes, but usually do not. GenBank. Accession Numbers: MF477238-MF477834.

Collins, S, Avolio, ML, Gries, C, Hallett, L, Koerner, SE, **La Pierre, KJ**, Rypel, A, Sokol, E, Fey, S, Flynn, D, Jones, S, Ladwig, L, Ripplinger, J, Jones, M. Compiled long-term community composition datasets of primary producers and consumers in both freshwater and terrestrial communities. <https://doi.org/10.6073/pasta/210ddb261095a820dea0a4f9eb0a6f4a>

Hodapp, D and 30 others (including **KJ La Pierre**). Plant species composition and environmental parameters from the Nutrient Network. <https://doi.org/10.5061/dryad.8vs569h/1> and <https://doi.org/10.5061/dryad.8vs569h/2>

## Organized Symposia and Workshops

- 2022 LTER All Scientists Meeting. Dominance: Identifying patterns and testing mechanisms. (*Workshop*; organizers: **KJ Komatsu**, ML Avolio, MD Smith)
- 2021 Ecological Society of America. Collaborative networks: Building thriving research communities vital to ecosystem science. (*Inspire Session*; organizers: AP Walker, C Iversen, **KJ Komatsu**, SD Wullschleger)
- 2020 Ecological Society of America. Moving beyond single metrics toward an integrated understanding of ecological communities and their effects on ecosystem function. (*Organized Oral Session*; organizers: **KJ Komatsu**, ML Avolio, K Kimmel)
- 2019 American Association for the Advancement of Science (AAAS). Public engagement in sustainability science: Getting land owners involved in research, and results in the hands of land owners. (*Symposium*; organizers: **KJ La Pierre**, SE Koerner)
- 2018 LTER All Scientists Meeting. Context-dependency of herbivore effects on ecosystem function: Roles of body size, productivity, and biome (*Workshop*; organizers: SE Koerner, **KJ La Pierre**, D Burkepile)
- 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 Seminars and Public Lectures

- 2022 University of North Carolina, Greensboro; University of Utah; North Carolina State University
- 2021 Smithsonian Science to Go (*public*); University of California, Berkeley; Aaniiih Nakoda College; San Francisco State University
- 2020 Syracuse University; Smithsonian Environmental Research Center, Evening Lecture Series (*public*)
- 2019 German Center for Integrative Biodiversity Research (iDiv); University of Maryland; Davidsonville Green Expo (*public*)
- 2018 University of North Carolina, Greensboro; Duke University; Tulane University (*graduate student invited speaker*); Virginia Commonwealth University; Smithsonian Conservation Biology Institute
- 2016 Smithsonian Environmental Research Center; Cedar Creek Ecosystem Science Reserve
- 2015 Washington State University, Vancouver; University of California, Berkeley
- 2009 Kansas State University

## Selected Presentations (past 5 years)

**Komatsu, KJ**, Avolio, ML, Auge, H, Cavender-Bares, J, Clark, A, Flores, H, Garbowski, M, German, E, Harpole, S, Kattge, J, Kimmell, K, Koerner, S, Korell, L, Langley, A, Munkemuller, T, Ohlert, T, Onstein, R, Padulles Cubino, J, Roscher, C, Schrodt, F, Wilcox, K. *Ecological Society of America* (2022). Global change drives opposing shifts in phylogenetic and functional diversity in grasslands worldwide.

**Komatsu, KJ**, Wilcox, KR, Avolio, ML. *Ecological Society of America* (2021). Building transdisciplinary partnerships for data synthesis to advance ecological understanding. (in Inspire, *Collaborative networks: Building thriving research communities vital to ecosystem science*)

**Komatsu, KJ**, Avolio, ML, Koerner, SE, Wilcox, KR, Smith, MD, Collins, SL, Isbell, F. *Ecological Society of America* (2020). Linking community and ecosystem responses to global change drivers to identify emergent macro-scale patterns. (in OOS, *Leveraging Ecoinformatics and Expert-Curated Databases to Understand Macro-Scale Community Dynamics in Time and Space*)

**Komatsu, KJ**, Porensky, L, Reinhart, K, van Emon, M, Wilcox, KR, Koerner, SE. *North American Congress of Conservation Biology* (2020). Integrating science and stakeholder perspectives in promoting rangeland resilience to multi-year droughts. (in OOS, *Boundary-spanning Science in North America, Highlighting Interdisciplinary Conservation Research at the Smithsonian Institution*)

**La Pierre, KJ**, Bloodworth, KJ, Esch, N, Pullen, J, Parker, JD. *Ecological Society of America* (2019). Consequences of rhizobial diversity for legume resistance and resilience to herbivory in the context of climate change. (in OOS, *Not a Quick Fix: The Ecology and Evolution of Symbiotic Nitrogen Fixation in a Complex World*)

**La Pierre, KJ**, Avolio, M, Koerner, S, Ratajczak, Z, Welti, E, Wilcox, KR, Zeglin, L, Blair, J. *LTERR All Scientists Meeting* (2018). Trajectories of plant community change with chronic nitrogen addition.

**La Pierre, KJ, Simms, EL.** *Ecological Society of America* (2018). Effects of invasive legumes on soil rhizobial communities and strategies for restoration.

## Courses

Ecological Approaches to Research (SP2023)

Ecological Debates: Mechanisms of Plant Competition (SP2023)

Principles of Ecology (FA2022)

Insect Apocalypse (FA2022)

## Service

2020-present Programs Subcommittee Member, Ecological Society of America

2019-present Science Steering Committee, Konza Prairie LTER

2016-present Advisory Board Member and Opt-In Project Coordinator, The Nutrient Network

2015-present Meeting Mentor, ESA, SEEDS Program

2014-present Judge ESA Buell-Braun Awards

2019-2020 Anne Arundel County High Schools, Senior Capstone Projects, Advisory Panelist

2016 Fellowship Mentor, UC Berkeley Biology Scholars Program

2016 Fellowship Mentor, ESA, Strategies for Ecology Education, Development, and Sustainability (SEEDS) Program

2014-2016 Scientist Participant, Oakland Unified School District, Dinner with a Scientist

2010-2013 Graduate Student Co-Chair, Long-Term Ecological Research (LTER) Network

2008-2009 Honors Science Curriculum Development, Wilbur Cross High School, New Haven, CT

**Grant Reviews** for US Department of Agriculture (panel and ad hoc reviewer); National Science Foundation (ad hoc and panel reviewer); Smithsonian Scholarly Studies (panel reviewer); Working Land and Seascapes Amplification and Innovation (panel reviewer); ESA SEEDS (panel reviewer); Lewis and Clark Fund for Exploration and Field Research (panel reviewer); UK Research and Innovation (ad hoc reviewer); Dutch Research Council (ad hoc reviewer)

**Fellowship Reviews** for UC Berkeley Miller Fellowship; Smithsonian Institution Research Fellowship

**Journal Reviews** (100+ manuscripts) for *Ecological Applications*, *Ecology*, *Ecology Letters*, *Ecosphere*, *Ecosystems*, *Frontiers*, *Functional Ecology*, *Global Change Biology*, *Journal of Applied Ecology*, *Journal of Ecology*, *Nature*, *Nature Communications*, *Nature Ecology and Evolution*, *New Phytologist*, *Oecologia*, *Oikos*, *Proceedings of the National Academy of Science*, *Proceedings of the Royal Society: Biology*, *Science*, among others

## Mentoring Experience

*Postdoctoral Fellows*

Amy Hruska (2019-2022)

Benton Taylor (2018-2020)

*Graduate Students*

Zachary Bunch, MS (2023-present)  
 Rachael Brenneman, PhD (2022-present)

*Technicians*

Sarah Gora (2022-present)  
 Shelley Bennett (2021-2022)  
 Sarah Alley (2020-present)  
 Kathryn Bloodworth (2017-2019)

*Graduate Fellows – Smithsonian Institution Fellowship Program*

Tim Ohlert (2021)  
 Alyssa Young (2020-2021)

*Post-Baccalaureate Fellows*

Rachael Brenneman (2021-2022)

*Undergraduate and High School Students (\* indicates honors thesis or independent project)*

UNCG Research Assistants: Kyla Grant (2023), Jayda Gresham (2023), Holly Cha (2023),  
 Wudeh Saidykhan (2023), Milan Toomer\* (2023), Zion York (2023), Gabby Von Der Lippe  
 (2022)  
 SERC REU: Nadeeah Fleming\* (2022), Mia Gaughan\* (2022), Marcela Morassi\* (2021),  
 Elizabeth Blake\* (2021), Annika Munson\* (2021), Skye Austin\* (2020-2021), Rachael  
 Brenneman\* (2020-2021), Julia Smith\* (2020), Ashley Boyette\* (2019), Alitzel  
 Villanueva\* (2019), Nicole Esch\* (2018), Brian Pfau\* (2017)  
 UC Berkeley Biology Scholars Program: Anthony Pham\* (2016-2017), Huy Ha (2016-2017)  
 ESA SEEDS Fellow: Chelsea Hazlett\* (2016)  
 UC Berkeley Research Assistant: Michael Paap\* (2014-2015)  
 High School Volunteers: Abigail Cannon (2017-2019), Sryia Maram (2014)  
 Konza REU: Arjun Potter (2011)

*Graduate Committees*

UNC Greensboro: Rose Terry, Morgan Frost, Alyssa Young  
 University of Maryland: Brendan Randall  
 Kansas State University: Bess Bookout

**Professional Affiliations and Activities**

**Memberships** Ecological Society of America

**Working Groups**

ongoing     Functional consequences of community changes with global change (sCoRRE), sDiv  
 (*organizer*)  
 ongoing     International Grazing Consortium (GEx), USDA (*participant*)  
 ongoing     Manipulation Experiment Synthesis Initiative (MESI), Auckland University of  
 Technology (*participant*)

- ongoing Biodiversity and Productivity across Scales, LTER (*participant*)
- ongoing The Nutrient Network, NSF (*advisory board member, site coordinator*)
- 2015-2019 Linking community and ecosystem responses to global change drivers (CoRRE C2E), LTER (*organizer*)
- 2014-2017 Community Dynamics: Toolkits for Analysis and Workflow, NCEAS (*participant*)
- 2013-2016 Species Interactions and Global Change (SIGC), BiGCB (*participant*)
- 2013 Ecosystem Sensitivity to Rainfall Experiments, LTER (*participant*)
- 2012-2015 Community Responses to Resource Experiments (CoRRE), LTER (*organizer*)
- 2011-2012 Ecosystem Responses to Chronic Resource Manipulations, LTER (*participant*)
- 2011-2012 Community Responses to Extreme Climatic Events, LTER (*participant*)
- 2009-2011 Seasonal Rainfall Variability across Ecosystems, LTER (*organizer*)