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RESEARCH INTERESTS

I use ecosystem ecology as a lens to study the changing biogeochemical cycles of plants and soils. I am particularly interested in the nitrogen and carbon cycles in forests and agricultural ecosystems.

EDUCATION

Ph.D. 2000. Colorado State University, Ecology
M.S. 1997. Northern Arizona University, Forestry, with Honors
B.A. 1993. University of Virginia, Chemistry, with Distinction

PROFESSIONAL APPOINTMENTS

2021- Distinguished Professor of Soil Biogeochemistry, Dept. of Ecosystem Science and Management, Penn State Univ.
2018- Chair, Intercollege Graduate Degree Program in Ecology, Penn State.
2015-2016 Investigador Invitado. Universidad Politécnica de Madrid
2012- Professor of Soil Biogeochemistry, Dept. of Ecosystem Science and Management, Penn. State Univ. (promoted from Associate to Full Professor in 2016)
2005-2012 Assistant then Associate (tenured in 2011) Professor of Soil Biogeochemistry, Dept. of Crop and Soil Sci., Penn. State Univ.
2002-2004 Assistant Professor, School of Life Sciences, Arizona State Univ.
2000-2002 USDA Postdoctoral Research Fellow, Department of Forest Sciences, Colorado State Univ.
1997-2000 Grad. Research Assistant, Graduate Degree Program in Ecology, Colorado State Univ.
1995-1997 Grad. Research Assistant, School of Forestry, Northern Arizona Univ.
1993-1994 Research Assistant, Harvard Forest LTER, Harvard Univ.
1992 Research Assistant, Virginia Coastal Reserve LTER, Univ. of Virginia.

HONORS AND AWARDS

2017 Alex and Jesse Black Award for Excellence in Research, PSU College of Agricultural Sciences
2015 Fulbright Scholar, Spain
2013 Bellis Award, Penn State Intercollege Degree Program in Ecology
2011 Community of Excellence Teaching Award, NACTA Chapter of PSU
2009 Distinguished Alumni Award, Colorado State University Graduate Degree Program in Ecology
2008 Early Career Research Award, Environment and Natural Resources Institute, PSU
2005 Junior Faculty Fellow in Conservation and the Environment, A.W. Mellon Foundation

PEER REVIEWED RESEARCH ARTICLES (my students, postdocs, technicians are in italics)

Kopp, M., D. Alving, T. Blackman, M. Kaye, J. Duncan, and J. Kaye. 2023. Critical zone perspectives for managing changing forests. *Forest Ecology and Management*, 528, p.120627.
Hodges, C., J. Regan, B. Forsythe, D. Oakley, *J. Kaye*, and S. Brantley. 2023. Using fixed-potential electrodes to quantify iron and manganese redox cycling in upland soils. *Biogeochemistry* 162:25–42. <https://doi.org/10.1007/s10533-022-01012-9>.
King, W., S. Richards, L. Kaminsky, *B. Bradley*, J. Kaye, and T. Bell. 2023. Leveraging microbiome rediversification for the ecological rescue of soil function. *Environmental Microbiome* 18, 7. <https://doi.org/10.1186/s40793-023-00462-4>

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- Kopp, M., Kaye, J., Smeglin, Y.H., Adams, T., Primka, E.J., Bradley, B., Shi, Y. and Eissenstat, D. 2022. Topography Mediates the Response of Soil CO₂ Efflux to Precipitation Over Days, Seasons, and Years. *Ecosystems*. <https://doi.org/10.1007/s10021-022-00786-1>
- Stratton, C.A., Ray, S., Bradley, B.A., Kaye, J.P., Ali, J.G. and Murrell, E.G., 2022. Nutrition vs association: plant defenses are altered by arbuscular mycorrhizal fungi association not by nutritional provisioning alone. *BMC Plant Biology*, 22: 1-10. <https://doi.org/10.1186/s12870-022-03795-3>
- Kleinman, P.J., D.L. Osmond, L.E. Christianson, D.N. Flaten, J.A. Ippolito, H.P. Jarvie, J.P. Kaye, K.W. King, A.B. Leytem, J.M. McGrath, N.O. Nelson, A.L. Shober, D. R. Smith, K.W. Staver, and A.N. Sharpley. 2022. Addressing conservation practice limitations and trade-offs for reducing phosphorus loss from agricultural fields. *Agricultural and Environmental Letters*. 7, e20084. <https://doi.org/10.1002/ael2.20084>
- Isbell, S.A., Alonso-Ayuso, M., Bell, T.H., Bradley, B., Rowles, T. and Kaye, J.P., 2022. Nitrogen services provided by interseeded cover crops in organic corn systems. *Agronomy Journal*, 114:2458-2472.
- Zhang, Z, J.P. Kaye, B.A. Bradley, J.P. Amsili, V. Suseela. 2022. Cover crop functional types differentially alter the content and composition of soil organic carbon in particulate and mineral-associated fractions. *Global Change Biology* 28: 5831-5848. DOI: 10.1111/gcb.16296
- King, W, L Kaminsky, S Richards, B Bradley, J Kaye, and T Bell. 2022. Farm-scale differentiation of active microbial colonizers. *ISME Communications* 2: 39. <https://doi.org/10.1038/s43705-022-00120-9>.
- Ray S, N Wenner, O Ankoma-Darko, JP Kaye, G Kuldau, and J Ali. 2022. Cover crop selection affects maize susceptibility to the fungal pathogen *Fusarium verticillioides*. *Pedobiologia* 91–92: 150806
- Ortiz, A., Jin, L., Ogrinc, N., Kaye, J., Krajnc, B. and Ma, L. 2022. Dryland irrigation increases accumulation rates of pedogenic carbonate and releases soil abiotic CO₂. *Scientific Reports*. DOI: 10.1038/s41598-021-04226-39daa7e9c-5f9e-4a11-9383- a10a2a3cc070
- Hodges, C., N. Carpenter, B. Forsythe, S.L. Brantley, J. Kaye. 2021. Carbon dioxide flux partitioning in a calcareous watershed with agricultural impacts. *Journal of Geophysical Research: Biogeosciences* 126 (10), e2021JG006379.
- Marcon, V, NE Hoagland, X Gu, W Liu, JP Kaye, Roman A. DiBiase, and SL Brantley 2021. How the capacity of bedrock to collect dust and produce soil affects phosphorus bioavailability in the northern Appalachian Mountains of Pennsylvania. *Earth Surf. Process. Landforms*.46:2807–2823. <https://doi.org/10.1002/esp.5209>
- Davidson-Lowe E, S Ray, EG Murrell, JP Kaye JP, JG Ali. 2021. Cover crop soil legacies alter phytochemistry and resistance to fall armyworm (Lepidoptera: Noctuidae) in maize. *Environmental Entomology* 50 (4), 958-967.
- Saha, D, JP Kaye, A Bohmik, MA Bruns, J Wallace, A Kemanian. 2021. Organic fertility inputs synergistically increase denitrification-derived nitrous oxide emissions in agroecosystems. *Ecological Applications* 31(7):e02403. 10.1002/eap.2403
- Morris, A, S Isbell, D Saha, and JP Kaye. 2021. Mitigating nitrogen pollution with under-sown legume-grass cover crop mixtures in winter cereals. *Journal of Environmental Quality* 50: 324-335.
- Baraibar, B., C. White, M. Hunter, D.M. Finney, M.E. Barbercheck, J.P. Kaye, W.S. Curran, J. Bunckek, and D. Mortensen. 2021. Weeds in cover crops: context and management considerations. *Agriculture* 11: 193.
- Isbell, S., B. Bradley, A. Morris, J. Wallace, and J.P. Kaye. 2021. Nitrogen dynamics in grain cropping systems integrating multiple ecologically-based management strategies. *Ecosphere*. 12(2):e03380. 10.1002/ecs2. 3380
- Amisli, J.P. and J.P. Kaye. 2021. Root traits of cover crops and carbon inputs in an organic grain rotation. *Renewable Agriculture and Food Systems*. 36:182-191. <https://doi.org/10.1017/S1742170520000216>

- Wallace, J., S. Isbell, R. Hoover, M. Barbercheck, J. Kaye, and W. Curran. 2021. Drill and broadcast establishment methods influence interseeded cover crop performance in organic corn. *Renewable Agriculture and Food Systems*. 36:77-85. <https://doi.org/10.1017/S174217052000006X>
- White, C.M., D.M. Finney, A.R. Kemanian, J.P. Kaye. 2021. Modeling the contributions of nitrogen mineralization to yield of corn. *Agronomy Journal* 113: 490-503. <https://doi.org/10.1002/agj2.20474>
- McConnell, CA, JP Kaye, and AR Kemanian. 2020. Review and Synthesis: Ironing out wrinkles in the soil phosphorus cycling paradigm. *Biogeosciences* 17: 5309–5333. <https://doi.org/10.5194/bg-17-5309-2020>
- Dove, N., K. Arogyaswamy, S. Billings, J. Botthoff, C. Carey, C. Cisco, J. DeForest, D. Fairbanks, N. Fierer, R. Gallery, J. Kaye, K. Lohse, M. Maltz, E. Mayorga, J. Pett-Ridge, W. Yang, S. Hart, E. Aronson. 2020. Continental-scale patterns of extracellular enzyme activity in the subsoil: an overlooked reservoir of microbial activity. *Environmental Research Letters* 15: 1040a1. <https://doi.org/10.1088/1748-9326/abb0b3>.
- Baraibar, B. EG Murrell, BA Bradley, ME Barbercheck, DA Mortensen, JP Kaye, CM White. 2020. Cover crop mixture expression is influenced by nitrogen availability and growing degree days. *PLOS ONE* 15(7): e0235868. <https://doi.org/10.1371/journal.pone.0235868>
- Cloutier M, Murrell EG, Barbercheck ME, Kaye JP, Finney DM, González IG, Bruns MA. 2020. Fungal community shifts in soils with varied cover crop treatments and edaphic properties. *Scientific Reports*. 10:6198 | <https://doi.org/10.1038/s41598-020-63173-7>
- Smeglin, Y, K Davis, Y Shi, D Eissenstat, J Kaye, and M Kaye. 2020. Observing and simulating spatial variations of forest carbon stocks in complex terrain. *Journal of Geophysical Research: Biogeosciences* 125, e2019JG005160. <https://doi.org/10.1029/2019JG005160>.
- Kaye, JP, SL Brantley, J Zan Williams, and the CZO Team. 2019. Ideas and perspectives: Proposed best practices for collaboration at cross-disciplinary observatories. *Biogeosciences* 16: 4661-4669.
- White, C.W., B. Bradley, D.M. Finney, and J.P. Kaye. 2019. Predicting cover crop nitrogen content with a handheld normalized difference vegetation index meter. *Agricultural and Environmental Letters* 4:190031. doi:10.2134/ael2019.08.0031
- Zhi, W., L. Li, W. Dong, W. Brown, J. Kaye, C. Steefel, and K.H. Williams. 2019. Distinct source water chemistry shapes contrasting concentration-discharge patterns. *Water Resources Research*, 55:4233–4251. <https://doi.org/10.1029/2018WR024257>
- Hodges, C., H. Kim, S. L. Brantley, J. Kaye. 2019. Soil CO₂ and O₂ concentrations illuminate the relative importance of weathering and respiration to seasonal soil gas fluctuations. 2019. *Soil Science Society of America Journal*. 83:1167–1180. doi: 10.2136/sssaj2019.02.0049
- Brewer T.E., E.L. Aronson, K. Arogyaswamy, S.A. Billings, J.K. Botthoff, A.N. Campbell, N.C. Dove, D. Fairbanks, R.E. Gallery, S.C. Hart, J. Kaye, G. King, G. Logan, K.A. Lohse, M.R. Maltz, E. Mayorga, C. O'Neill, S.M. Owens, A. Packman, J. Pett-Ridge, A.F. Plante, D.D. Richter, W.L. Silver, W.H. Yang, N. Fierer. 2019. Ecological and genomic attributes of novel bacterial taxa that thrive in subsurface soil horizons. *mBio* 10:e01318-19. <https://doi.org/10.1128/mBio.01318-19>.
- Kizewski, F.R., J.P. Kaye, and C.E. Martínez. 2019. Nitrate transformation and immobilization in particulate organic matter incubations: Influence of redox, iron and (a)biotic conditions. *PLoS ONE* 14 (7): e0218752. <https://doi.org/10.1371/journal.pone.0218752>
- Hunter, M., C.M. White, J.P. Kaye, and A.R. Kemanian. 2019. Ground-truthing a recent report of cover-crop-induced winter warming. *Agricultural and Environmental Letters*. doi: 10.2134/ael2019.03.0007
- Kaye, J.P., D. Finney, C. White, B. Bradley, M. Schipanski, M. Alonso-Ayuso, M. Hunter, M. Burgess, and C. Mejia. 2019. Managing nitrogen through cover crop species selection in the U.S. mid-Atlantic. *Plos One* 14(4): e0215448. <https://doi.org/10.1371/journal.pone.0215448>
- Sullivan, P. L., Y. Goddérís, Y. Shi, X. Gu, J. Schott, E.A. Hasenmueller, J.P. Kaye, C. Duffy, H. Lin, and S. Brantley. 2019. Exploring the effect of aspect to inform future earthcasts of climate-driven

- changes in weathering of shale. *Journal of Geophysical Research: Earth Surface*, 124. <https://doi.org/10.1029/2017JF004556>
- Hunter, M.C., *Schipanski, M.E., Burgess, M.H., LaChance, J.C., Bradley, B.A., Barbercheck, M.E., Kaye, J.P., and D.A. Mortensen.* 2019. Cover crop mixture effects on maize, soybean, and wheat yield in rotation. *Agricultural and Environmental Letters* 4:180051. doi:10.2134/ael2018.10.0051
- Murrell E.G., Ray S., Lemmon M.E., Luthe D.S., Kaye J.P.* 2019. Cover crop species affect mycorrhizae-mediated nutrient uptake and pest resistance in maize. *Renewable Agriculture and Food Systems*. <https://doi.org/10.1017/S1742170519000061>
- Hoagland, B., C. Schmidt, T. Russo, R. Adams, J. Kaye.* 2019. Controls on nitrogen transformation rates on restored floodplains along the Cosumnes River, California. *Science of the Total Environment* 649: 979–994
- Li, L., R.A. DiBiase, J. Del Vecchio, V. Marcon, *B. Hoagland, D. Xiao, C. Wayman, Q. Tang, Y. He, P. Silverhart, I. Szink, B. Forsythe, J.Z. Williams, D. Shapich, G.J. Mount, J. Kaye, L. Guo, H. Lin, D. Eissenstat, A. Dere, K. Brubaker, M. Kaye, K.J. Davis, T. Russo, and S.L. Brantley.* 2018. The effect of lithology and agriculture at the Susquehanna Shale Hills Critical Zone Observatory. *Vadose Zone J.* 17:180063. doi:10.2136/vzj2018.03.0063
- Brantley, S.L., T. White, N. West, J.Z. Williams, B. Forsythe, D. Shapich, J. Kaye, H. Lin, Y. Shi, M. Kaye, E. Herndon, K.J. Davis, Y. He, D. Eissenstat, J. Weitzman, R. DiBiase, L. Li, W. Reed, K. Brubaker, and X. Gu. 2018. Susquehanna Shale Hills Critical Zone Observatory: Shale Hills in the context of Shaver's Creek watershed. *Vadose Zone J.* 17:180092. doi:10.2136/vzj2018.04.0092
- Baraibar B., D. Mortensen, M. Hunter, M. Barbercheck, J. Kaye, D Finney, W. Curran, J. Buncek, and C. White.* 2018. Growing degree days and cover crop type explain weed biomass in winter cover crops. *Agronomy for Sustainable Development* 38:65 <https://doi.org/10.1007/s13593-018-0543-1>
- Weitzman, J. N., and J.P. Kaye.* 2018. Nitrogen budget and topographic controls on nitrous oxide in a shale-based watershed. *Journal of Geophysical Research: Biogeosciences*, 123. <https://doi.org/10.1029/2017JG004344>
- Hoagland, B., T.A. Russo, X. Gu, L. Hill, J. Kaye, B. Forsythe, and S. L. Brantley.* 2017. Hyporheic zone influences on concentration-discharge relationships in a headwater sandstone stream. *Water Resour. Res.* 53: 4643–4667. doi:10.1002/2016WR019717.
- Rosenzweig, S.T., *M.E. Schipanski,* and J.P. Kaye. 2017. Rhizosphere priming and plant-mediated cover crop decomposition. *Plant and Soil* 417: 127-139. <https://doi.org/10.1007/s11104-017-3246-5>.
- Finney, D., E. Murrell, C. White, B. Baraibar, M. Barbercheck, B. Bradley, S. Cornelisse, M. Hunter, J. Kaye, D. Mortensen, C. Mullen, and M. Schipanski.* 2017. Ecosystem services and disservices are bundled in simple and diverse cover cropping systems. *Agricultural and Environmental Letters*. doi: 10.2134/ael2017.09.0033
- Hasenmueller, E, X. Gu, J. Weitzman, T. Adams, G. Stinchcomb, D. Eissenstat, P. Drohan, S. Brantley, and J. Kaye.* 2017. Weathering of rock to regolith: The activity of deep roots in bedrock fractures. *Geoderma* 300:11-31.
- Weitzman, J.N., and J.P. Kaye.* 2017. Nitrate retention capacity of milldam-impacted legacy sediments and relict A horizon soils. *Biogeosciences Discussions* <http://www.soil-discuss.net/soil-2016-60/>
- Finney, D.M., J.S. Buyer, and J.P. Kaye.* 2017. Living cover crops have immediate impacts on soil microbial community structure and function. *Journal of Soil and Water Conservation*. July/August 2017 vol. 72 no. 4 361-373. doi: 10.2489/jswc.72.4.361 (2021 recipient of the *Journal of Soil and Water Conservation* Best Research Paper for Impact and Quality Award)
- Finney, D.M. and J.P. Kaye.* 2017. Functional diversity in cover crop polycultures increases multifunctionality of an agricultural system. *Journal of Applied Ecology* 54:509-517. doi: 10.1111/1365-2664.12765
- Kaye, J.P., and M. Quemada. 2017. Using cover crops to mitigate and adapt to climate change: A review. *Agronomy for Sustainable Development* 37:4. DOI 10.1007/s13593-016-0410-x

- Schipanski, M., M.E. Barbercheck, E.G. Murrell, J. Harper, D.M. Finney, J.P. Kaye, R.E. Smith, and D.A. Mortensen.* 2017. Balancing multiple objectives in organic feed and forage cropping systems. *Agriculture, Ecosystems & Environment.* 239:219-227.
- White, C.M., DuPont, S.T., Hautau, M., Hartman, D., Finney, D.M., Bradley, B., LaChance, J.C., Kaye, J.P.,* 2017. Managing the trade off between nitrogen supply and retention with cover crop mixtures. *Agric. Ecosyst. Environ.* 237, 121–133. doi:10.1016/j.agee.2016.12.016
- Murrell, E.G., M.E. Schipanski, D.M. Finney, M.C. Hunter, M. Burgess, J.C. LaChance, B. Baraibar, C.M. White, D.A. Mortensen, and J.P. Kaye.* 2017. Achieving diverse cover crop mixtures: Effects of planting date and seeding rate. *Agronomy Journal* 109:259-271. doi:10.2134/agronj2016.03.0174
- Saha, D., B. Rau, J.P. Kaye, F. Montes, P.R. Adler, and A.R. Kemanian.* 2017. Landscape control of nitrous oxide emissions during the transition from conservation reserve program to perennial grasses for bioenergy. *Global Change Biology Bioenergy* 9:783-795. doi: 10.1111/gcbb.12395
- Kaye, J.P., M.W. Kaye, S.C. Hart, W.W. Covington, and P.Z. Fulé.* 2016. Slow carbon and nutrient accumulation in trees established after fire exclusion in the southwestern United States. *Ecological Applications* 26: 2402-2413. doi: 10.1002/eap.1407
- Weitzman, J.N, and J.P. Kaye.* 2016. Variability in nitrogen and carbon cycling across forest, urban and agricultural land uses. *Ecosystems* 19:1345-1361. doi: 10.1007/s10021-016-0007-x
- White, C.M., Kemanian, A., Finney, D.M. and J.P. Kaye.* 2016. A Model-Data Fusion Approach for Predicting Cover Crop Nitrogen Supply to Corn. *Agronomy Journal.* 108:2527-2540. doi:10.2134/agronj2016.05.0288
- Brantley, S. R. DiBiase, T. Russo, Y. Shi, H. Lin, K. J. Davis, M. Kaye, L. Hill, J. Kaye, D. Eissenstat, B. Hoagland, A. Dere, A. L. Neal, K. Brubaker, D. Arthur.* 2016. Designing a suite of measurements to understand the critical zone. *Earth Surface Dynamics* 4:211-235.
- Finney, D., C. White, and J. Kaye.* 2016. Biomass production and carbon:nitrogen ratio influence ecosystem services from cover crop mixtures. *Agronomy Journal* 108:39–52. doi:10.2134/agronj15.0182
- Finney, D.M., Eckert, S.E., and J.P. Kaye.* 2015. Drivers of nitrogen dynamics in ecologically based agriculture revealed by long-term, high frequency field measurements. *Ecological Applications* 25:2210-2227. <http://dx.doi.org/10.1890/14-1357.1>.
- Hasenmueller, E., L. Jin, G. Stinchcomb, H. Lin, S. Brantley, J.P. Kaye.* 2015. Topographic controls on the depth distribution of soil CO₂ in a small temperate watershed. *Applied Geochemistry* 63:58-69.
- Wiechmann, M., M. Hurteau, J. Kaye, and J. Miesel.* 2015. Charcoal C content following prescribed burning in a mixed-conifer forest, Sierra Nevada, California. *PLOS ONE* 10(8): e0135014. doi:10.1371/journal.pone.0135014
- Lewis, D., M. Castellano, and J.P. Kaye.* 2014. Forest succession, soil carbon accumulation, and rapid nitrogen storage in poorly-remineralized soil organic matter. *Ecology* 95: 2687-2693.
- Jin, L., N. Ogrinc, T. Yesavage, E. Hasenmueller, L. Ma, P. Sullivan, J. Kaye, C. Duffy, and S. Brantley.* 2014. The CO₂ consumption potential of gray shale weathering: insights from the evolution of carbon isotopes in the Susquehanna Shale Hills critical zone observatory. *Geochimica et Cosmochimica Acta* 142:260-280.
- White, C., Kemanian, A. and J. Kaye.* 2014. Implications of carbon model structure for simulated nitrogen mineralization dynamics. *Biogeosciences* 11:9667-9695.
- McDaniel, M., J. Kaye, M. Kaye.* 2014. Do “hot moments” become hotter under climate change?: Soil nitrogen dynamics from a climate manipulation experiment in a post-harvest forest. *Biogeochemistry* 121:339-354.
- Weitzman, J., K. Forshay, J.P. Kaye, Meyer, P., Koval, J., and R. Walter.* 2014. Potential nitrogen and carbon mineralization in a landscape rich in mill dam legacy sediments. *Biogeochemistry* 120:337-357.

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- Lewis, D. B., J. P. Kaye, and A. P. Kinzig. 2014. Legacies of agriculture and urbanization in labile and stable organic carbon and nitrogen in Sonoran Desert soils. *Ecosphere* 5(5):59.
<http://dx.doi.org/10.1890/ES13-00400.1>
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- Schipanski, M., R.G. Smith, T.L. Pisani-Gareau, R. Jabbour, D.B. Lewis, M.E. Barbercheck, D.A. Mortensen, J.P. Kaye. 2014. The structure of multivariate relationships influencing crop yields during the transition to organic management. *Agriculture Ecosystems and Environment* 189:119-126.
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- Schipanski, M., M. Barbercheck, M.R. Douglas, D.M. Finney, K. Haider, J.P. Kaye, A.R. Kemanian, D.A. Mortensen, M.R. Ryan, J. Tooker, and C.M. White. 2014. A conceptual framework for evaluating ecosystem services provided by cover crops in agroecosystems. *Agricultural Systems* 125:12-22.
- McDaniel, M.D., R.J. Wagner, C.R. Rollinson, B.A. Kimball, M.W. Kaye, and J.P. Kaye. 2014. Microclimate and ecological threshold responses in a warming and wetting experiment following whole-tree harvest in central Pennsylvania. *Theoretical and Applied Climatology* 116:287-299.
- Zhang, Y., Y. Qian, D. Bremer, J. Kaye, and W.J. Parton. 2013. Simulation of N₂O Emissions and estimation of global warming potential in turfgrass systems using the DAYCENT model. *Journal of Environmental Quality* 42: 1100-1108.
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- McDaniel, M., J. Kaye, and M. Kaye. 2013. Field climate manipulations had limited effects on soil extracellular enzyme activities in a post-harvest forest. *Soil Biology and Biochemistry* 56: 90-98.
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- Sponseller, R., S. Hall, D. Huber, N. Grimm, J. Kaye, C. Clark, and S. Collins. 2012. Variation in monsoon precipitation drives spatial and temporal patterns of *Larrea tridentata* growth in the Sonoran Desert. *Functional Ecology* 26:750-758.
- Lee, C., A. N. Hristov, C. J. Dell, G. W. Feyereisen, J. Kaye, and D. Beegle. 2012. Effect of dietary protein concentration on ammonia and greenhouse gas emitting potential of dairy manure. *J. Dairy Sci.* 95:1930-1941.
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PEER REVIEWED BOOK CHAPTERS

- Yu, Xuan, C. Duffy, J. Kaye, W. Crow, G. Bhatt, Y. Shi. 2015. Watershed Reanalysis of Water and Carbon Cycle Models at a Critical Zone Observatory. *In: V. Lakshmi (ed.), Remote Sensing of the Terrestrial Water Cycle, Geophysical Monograph, 206.* AGU Books.
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- Nadelhoffer, K.J., R.D. Boone, R.D. Bowden, J.D. Canary, J.P. Kaye, P. Micks, A. Ricca, J.A. Aitkenhead, K. Lajtha, and W.H. McDowell. 2004. The DIRT experiment: Litter and root influences on forest soil organic matter stocks and function. *In: D. Foster and J. Aber (eds.), Forests in Time. Synthesis Volume of the Harvard Forest LTER Program.* Yale University Press.
- Burke, I.C., J.P. Kaye, S.P. Bird, S.A. Hall, R.L. McCulley, and G.L. Sommerville. 2003. Evaluating and testing models of terrestrial biogeochemistry: The role of temperature in controlling decomposition. Pp. 225-253. *In: Canham, C.D., J.J. Cole, and W.K. Lauenroth, editors. Models in Ecosystem Science.* Princeton (NJ): Princeton University Press.

DATA PAPERS (peer reviewed papers documenting large team datasets)

- Wieder, WR, D Pierson, SR Earl, K Lajtha, S Baer, F Ballantyne, AA Berhe, S Billings, LM Brigham, SS Chacon, J Fraterrigo, SD Frey, K Georgiou, M de Graaff, AS Grandy, MD Hartman, SE Hobbie, C Johnson, J Kaye, E Snowman, ME Litvak, MC Mack, A Malhotra, JAM Moore, K Nadelhoffer, C Rasmussen, WL Silver, BN Sulman, X Walker, & S Weintraub. 2021. SOils DATA Harmonization database (SoDaH): an open-source synthesis of soil data from research networks version 1.0. *Earth System Science Data Discussion* doi:10.5194/essd-2020-195.
- Bond-Lamberty et al. (80+ co-authors, including J. Kaye). 2020. COSORE: A community database for continuous soil respiration and other soil-atmosphere greenhouse gas flux data. *Global Change Biology.* 26: 7268-7283.

OTHER SCIENCE WRITING

- Lohse, KA, SA Billings, RA DiBiase, P Kumar, AA Berhe, and J Kaye. 2020. Soil signals tell of landscape disturbances, *Eos*, 101, <https://doi.org/10.1029/2020EO148736>. Published on 24 September 2020.

FUNDED GRANTS

- 6/1/23-5/31/27. USDA AFRI. Co-PI. Maximizing Mixture Multifunctionality: farm-tuning cover crop mixtures to improve ecosystem functions and resilience. With C. Lowry. \$650,000.
- 10/1/2022-9/30/2027. USDA NRCS. Co-PI. Climate-smart Agriculture that is profitable, Regenerative, Actionable, and Trustworthy (CARAT). With A. Kemanian. \$25,000,000.
- 10/1/2022-9/30/2024. USDA McIntire-Stennis. Sole PI. Sustaining measurements that link forest growth, erosion and water flow at the Shale Hills Critical Zone Observatory. \$193,263.
- 9/1/2022-8/31/2026. USDA Small Equipment. Co-PI. Shimadzu GC-2030 Greenhouse Gas Chromatograph (GC) for a multi-user soils research lab. With M.A. Bruns and K. Bazilevskaya. \$94,444.
- 8/2021-7/2024. USDA OREI. Co-PI. Anaerobic Soil Disinfestation for Enhancing and Advancing the Sustainability of Organic Specialty Crop Production Systems (ASD-EASY Organic). With F. Di Gioia. \$3,000,000
- 9/2020-10/2023. USDA OREI. Lead PI. Advancing nitrogen decision support for organic agriculture. With C. White and D. Finney. \$500,000.
- 9/2019-8/2022. USDA ORG. Co-PI. Smart tillage to reduce N₂O emissions from organic agriculture. With A. Kemanian. \$500,000.

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- 9/2019-8/2022. USDA ORG. Co-PI. Is there a role for microbial management in organic agriculture? With T. Bell. \$500,000.
- 5/2019-4/2024. USDA CAP SAS. Cover page Co-PI. Thriving Agricultural Systems in Urbanized Landscapes. With D. Abler and many others. \$8,975,094
- 9/2018-8/2023. NSF NRT INFEWS. Cover page Co-PI. Landscape-U, Impactful partnerships among graduate students and managers for regenerative landscape design. With Erica Smithwick and others. \$3,000,000.
- 7/2018-6/2023. USDA NNF. Lead PI. Training forest resource scientists as critical zone managers. With M. Kaye and J. Duncan. \$262,500.
- 10/2017-9/2020. USDA NIFA AFRI Foundational. Co-PI. Cover crop cascades can benefit mycorrhizae-associated maize resistance to insect pests. With Jared Ali. \$500,000.
- 8/2016-8/2018. DOE. Co-PI. Understanding ecohydrological controls of biogeochemical reactions and fluxes at the watershed scale. With Li Li, and 5 others. \$180,000.
- 9/2015-9/2019. USDA NIFA OREI. Lead PI. Making diversity functional: Farm-tuning cover crop mixtures to meet grower needs. With M. Barbercheck and D. Mortensen. \$999,972.
- 8/2015-7/2018. USDA NIFA ORG. Co-PI. Unraveling the interactive effects of tillage, residue, and manure additions on nitrous oxide emissions in grain and silage systems. With Armen Kemanian. \$499,999.
- 9/2015-1/2016. US Fulbright Commission. Sole PI. Faculty Fulbright Scholar to Spain. ~\$15,000.
- 10/2014-9/2018. USDA NIFA OREI. Co-PI. A reduced-tillage toolbox: Alternative approaches for integrating cover crops and reduced tillage in an organic feed and forage system. With Mary Barbercheck (PD), William Curran, Armen Kemanian, and several others. \$2,000,000.
- 08/2014-07/2018. Co-PI. DOE. Linking topographic variation in belowground C processes with hydrological processes to improve Earth System models. With D. Eissenstat and 4 others. \$1,000,000.
- 10/2013-9/2018. Co-PI. NSF EAR. Using the Susquehanna-Shale Hills CZO to project from the geologic past to the anthropocene future. With Susan Brantley and 9 co-PIs. \$4,496,160.
- 10/2013-9/2017. Co-PI, USDA NIFA. Biologically based fertilizer recommendations to meet yield expectations and preserve water quality. With A. Franzleubbers and many others. \$500,000 (\$90,000 to PSU).
- 9/2012 to 8/2013. Co-PI. NSF EAR. An accomplishment-based renewal of the Susquehanna-Shale Hills Critical Zone Observatory. With Susan Brantley and 9 co-PIs. \$1,000,000.
- 3/2011 to 2/2012: Sole-PI, PA-WRRC. Quantifying the N retention capacity of legacy sediments and hydric soils before and after restoration. \$16,700.
- 9/2011-8/2016: Lead-PI, USDA OREI. Finding the right mix: Multifunctional cover crop cocktails for organic systems. With M. Barbercheck, D. Mortensen, D. Luthe, and 6 others. \$2,296,803.
- 1/2011-12/2014: Co-PI, USDOT Sun Grant. Production and life-cycle assessment of herbaceous bioenergy crops across the heterogeneous landscape of the Northeast. With Kemanian (lead-PI), Adler and Drohan. \$253,941.
- 10/2010-9/2014: Co-PI, USDA Cooperative Agreement. Integrated Pasture-Crop Rotation. With M. Hall (lead-PI). \$168,970.
- 9/2010-8/2013: Co-PI, NSF-OISE-IRES. International: Training global change ecologists through a US-Spain collaboration, with M.W. Kaye (lead PI) and D. Behring. \$149,553.
- 7/2008-6/2012: Lead-PI, NSF-DEB-Ecosystem Studies. Testing a conceptual model of the terrestrial nitrogen cycle including rapid stabilization of nitrogen in soil, with C.E. Martinez and J. Ewing. \$532,371. (plus REU supplements of \$21,240)
- 7/2007-6/2012: Co-PI, NSF Critical Zone Observatory Network. Regolith & the Critical Zone in the Susquehanna River Basin: The Shale Experiment, with Chris Duffy and many Co-PIs. \$4,250,000.

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- 10/2007-9/2011: Co-PI, USDA NRI. Transitions to Prosperity and Sustainability: Enhancing Small and Medium-Sized Farms in the Rural Exurban-Urban Transitional Zone, with J. Findeis (PD), D. Mortensen, R. Stedman, K. Brazier, and D. Miller. \$491,018.
- 10/2007-9/2011: Co-PI, USDA RAMP Weed management, environmental quality and profitability in organic feed and forage production systems, with M. Barbercheck, D. Mortensen, J. Harper, and N.E. Kiernan. \$980,804.
- 9/2007-8/2011: Co-PI, DOE NICCR. Northeastern forest regeneration in warmer and wetter climate, with M. Kaye and M. Abrams. \$410,831.
- 10/2006-9/2009; Co-PI, USDA/USDI Joint Fire Sciences, Modeling forest change and management alternatives on a restored landscape, with P. Fule and W. Covington. \$140,000 (\$39,651 to Kaye).
- 4/2005-6/2010: Sole-PI, The Andrew Mellon Foundation. A new conceptual model of the terrestrial N cycle based on rapid uptake of N into stable soil organic matter; \$260,000.
- 4/2005-3/2009: Lead-PI, NSF-DEB-Ecosystem Studies. Collaborative Research: Ecosystem responses to nutrient deposition from the urban atmosphere; with N. Grimm, S.H. Hall, and J. Allen; \$707,000 (\$96,000 to Kaye).
- 8/2005-7/2010: Lead-PD, USDA NRI Competitive Grants, Managed Ecosystems: Fire management and carbon storage in Southwestern ponderosa pine forests, with S. Hart, P. Fule, S. Haase, K. Prewitt, and M. Kaye. \$450,000.
- 9/2005-8/2009: Co-PI, USDA National Needs Fellowships in Integrated Soil and Water Sciences, with H. Lin, T. Wagener, J. Shortle, and G. Petersen. \$138,000.
- 8/2005-7/2008: Co-PD, USDA NRI Special Research Grants: Improved Dairy Management Practices. Integrated Strategies for Reducing Gas Emissions from Dairy Farms, with T. Richard, E. Wheeler, G. Varga, and M. Bruns. \$330,000.
- 9/2004-8/2007: co-PI, USDA/NASA/DOE Carbon Cycle Science Program. Carbon dioxide and methane fluxes in disturbed southwestern ponderosa pine forests, with T. Kolb, G.W. Koch, B. Hungate, and S.C. Hart; \$700,000 (\$74,000 to Kaye).
- 11/2004-10/2010: co-PI, NSF-DEB-Long-Term Studies. Central Arizona Phoenix LTER: Phase 2, with N. Grimm, C. Redman, and 23 other co-PIs; \$4,919,954.
- 1/2004-12/2004: lead PI, College of Liberal Arts and Sciences, ASU. Developing a collaborative research initiative in ponderosa pine forest ecology at ASU, with M.W. Kaye, and J. Sabo. \$19,650.
- 9/2003-8/2005: co-PI, NSF Biocomplexity in the Environment, Coupled Biogeochemical Cycles. Coupled biogeochemical cycles in urban and agricultural ecosystems: role of hydrology, stoichiometry, spatial linkages, and human behavior; with P. Brezonik, L. Baker, S. Hobbie, J. King, D. Mulla, M. Bauer, and D. Hope; \$355,317
- 3/2003-8/2004: co-PI, Office of the Vice Provost for Research, ASU. Pilot socio-ecological research project at Agua Fria National Monument, with K. Spielmann and 7 co-PIs; \$51,000.
- 10/2002-9/2005: sole PI, NSF International Studies. Fire management and carbon storage in Spain and the United States; \$32,125.
- 5/2001-4/2003: co-PI, Ecological Restoration Institute. Long-term effects of restoration on the function of a ponderosa pine-bunchgrass ecosystem, with S.C. Hart; \$50,630.
- 8/2000-7/2002: sole PI, USDA NRI Competitive Grants, Managed Ecosystems. Land-use change in central Colorado: Ecosystem consequences of urbanization; \$90,000.

FUNDED GRADUATE AND POSTDOCTORAL FELLOWSHIPS (Students that I mentored in writing fellowship proposals and completing the funded research and professional development).

- 7/2023-6/2025. USDA ELI. Advisor of Predoctoral Fellow. Microbial carbon cycling under climate change: using soil texture gradients to understand agricultural carbon storage. With M. Luthard (PhD Student). \$179,748

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- 1/2022-12/2023. USDA ELI. Advisor of Postdoctoral Fellow. Modeling Land Use and Climate Change Scenarios to Manage Water Quality in Integrated Agricultural-Urban Landscapes. With W. Lisenbee (Postdoc). \$185,965
- 1/2022-12/2024. USDA ELI. Advisor of Predoctoral Fellow. Minimizing nitrogen “pollution swapping” linking root traits to N₂O emissions in edge-of-field forested riparian buffers. With M. Kopp (PhD Student). \$179,235.
- 6/2020-6/2023. USDA ELI. Advisor of Predoctoral Fellow. Quantifying the mechanisms and biogeochemical impact of anaerobic microsites within upland soils. With C. Hodges (PhD Student). \$178,940.
- 5/2019- 4/2021. USDA ELI. Advisor of Predoctoral Fellow. Using cover crop mixtures to shape the soil microbiome for targeted nitrogen cycling services. With S. Isbell (PhD Student). \$119,976.
- 7/2016-4/2019. USDA NE SARE Graduate Fellowship. Advisor of lead-PI. Interseeded cover crops: Evaluating nitrogen retention services provided by plant-microbe relationships. With S. Isbell (Ph.D. Student) \$14,998.
- 5/2016-5/2019: Advisor of MS Student. NSF GRFP. To Andrew Morris.
- 10/2014-9/2016. USDA NIFA Graduate Fellowship. Advisor of Predoctoral Fellow. A deeper understanding: using the depth distribution of N₂O to improve predictions of soil-atmosphere emissions. With J. Weitzman (Ph.D. Student). \$75,610.
- 6/2013-8/2014. Co-PI. USDA/USDI JFSP Graduate Fellowship. Quantifying the effect of fuel size on charcoal formation during prescribed fire. With M. Weischman (M.S. Student) and M. Hurteau. \$23,612.
- 8/2012-7/2015: USDA NIFA Graduate Fellowship. Advisor of Predoctoral Fellow. Building belowground diversity with cover crops to enhance agroecosystem resilience to climate change. With D. Finney (Ph.D. student). \$75,000.
- 8/2012-7/2014. Co-Advisor of Postdoctoral Fellow. USDA NIFA Postdoctoral Fellowship. Plant mediation of nitrogen mineralization via shifts in rhizosphere carbon allocation. With M. Schipanski (Postdoc) and D. Mortensen. \$130,000.
- 5/2012-5/2015: Advisor of PhD Student. NSF GRFP. To Alison Grantham (PhD Student).
- 9/2011-8/2013: Advisor of lead-PI. USDA-NESARE Cover crop cocktails: Harnessing diversity to enhance nitrogen retention in agroecosystems. With D. Finney (Ph.D. student). \$14,998
- 6/2009-5/2010: Advisor of PhD Student, NSF-DEB-Ecosystem Studies. Dissertation Research: Nitrogen transformation and transport along a soil texture gradient. With M. Castellano (Ph.D. student and Lead-PI and H. Lin (co-PI). \$11,540.
- 7/2007-6/2010: Co-PI, NOAA-NERRS Graduate Research Fellowship Program. Using soil properties as a framework for understanding nutrient transport and transformation at the terrestrial-aquatic estuarine interface. To Mike Castellano (Ph.D. Student) with J. Kaye (Advisor) and H. Lin (co-Advisor) as Co-PIs. \$59,483.

PRESENTATIONS AT CONFERENCES

- Andrews, E., A. Ortiz, V. Molina, J. Kaye, A. Darrouzet-Nardi, and L. Jin. 2023. Soil CO₂ dynamics in flood irrigated arid agricultural fields: temporal variability of abiotic and biotic CO₂ production and transport. Goldschmidt 2023 Conference, Lyon, France.
- Kopp, M. W., and Kaye, J. P. 2022. Untangling Drivers of High Nighttime Soil CO₂ Efflux from Forested Soils. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- Luthard, M., Arrington, K., Bradley, B. A., Finney, D. M., White, C. M., and Kaye, J. P. (2022) Investigating Soil Texture As a Control on Microbial Carbon Cycling. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- Arrington, K., White, C. M., Bradley, B. A., Rivera Ocasio, Z., and Kaye, J. P. (2022) Modeling Corn Yield Credits from Nitrogen in Soil Organic Matter and Cover Crops. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.

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- Lisenbee, W., Saha, A., Mohammadpour, P., Cibin, R., Kaye, J. P., Grady, C., and Chaubey, I. (2022) Water Quality Implications of Recycling Manure and Food Waste Compost in Circular Agricultural Systems. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- McConnell, C. A., Kaye, J. P., Duiker, S. W., and Kemanian, A. R. (2022) How Stratified Is Stratified? High Resolution Measurements of Nutrient Distributions in Soil Under No-till. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- Rice, E., Bell, T., Burghardt, L., Kaye, J. P., and Lowry, C. (2022) Unearthing Plant Root Composition in Cover Crop Mixtures: A Method Study. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- Rivera Ocasio, Z., Patel, H., King, W., Bell, T., Kaye, J. P., and White, C. M. (2022) Effects of Cover Crops and Nutrient Management on Microbial Carbon Use Efficiency and Nitrogen Mineralization. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
- Jin, L., Ortiz, A., Molina, V., Garcia, A., Orona, V., Quiroz, M., Kaye, J. P., Doser, D. I., Ma, L., Darrauzet-Nardi, A. (2022). "Controls, rates, and impacts of enhanced calcite accumulation and abiotic CO₂ emission in irrigated drylands," American Geophysical Union, San Francisco, USA, Contributed
- Hodges, C., Vivanco, L., Araujo, P., Hess, L., Kaye, J. P., Austin, A. (2022). "Investigating mineral weathering and soil carbon storage across a Patagonian climate by vegetation pedogenic matrix," Goldschmidt, Hi, USA, Contributed. International.
- Hodges, C., Brantley, S., Kaye, J. P. (2021). "Mineralogy Acts as a Control on Carbon Dioxide and Oxygen Concentrations in Soils at the Susquehanna Shale Hills Critical Zone Observatory." Soil Science Society of America, Salt Lake City, UT, USA. (Oral)
- McConnell, C., Shi, Y., Rozum, R., Kaye, J. P., Kemanian, A. R. (2021). "Modeling Nutrient Cycling When Interseeding Cover Crops in the Chesapeake Bay Watershed." Soil Science Society of America, Salt Lake City, UT, USA. (Oral)
- Kyker-Snowman, E., Wieder, W., Berhe, A. A., Georgiou, K., Hartman, M., Kaye, J. P., Malhotra, A., Pierson, D., Grandy, S. (2021). "Soil Carbon and Nitrogen Couplings in Observations and Models," American Geophysical Union, San Francisco, US. (Oral)
- Hodges, C., Brantley, S., Kaye, J. P. (2021). "Soil carbon dioxide and oxygen concentrations indicate mineralogy plays a key role in controlling soil pCO₂," European Geophysical Union. (Oral)
- Isbell, S., Bell, T., Kaye, J. P. (2021). "Using Cover Crop Mixtures to Shape the Soil Microbiome for Targeted Nitrogen Cycling Services," Soil Science Society of America, Salt Lake City, UT, USA. (Poster)
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- Primka, EJ IV, TS Adams, AS Orr, W Reed, *JP Kaye* and DM Eissenstat. 2019. Fine root production and tree basal area effects on early-growing-season soil CO₂ efflux across a mesic temperate forest catchment. American Geophysical Union Fall Meeting, San Francisco.
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- Isbell, S.* and J. Kaye. 2018. Nitrogen services provided by interseeded cover crops in organic corn systems. Agronomy Society of America Annual Meeting, Baltimore.
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- Hasenmueller, E. X. Gu, J. Weitzman,* T. Adams, G. Stinchcomb, D. Eissenstat, P. Drohan, S. Brantley, and J. Kaye. 2018. The weathering of rock to regolith: Activity of deep roots in bedrock fractures (Invited). American Geophysical Union Fall Meeting, Washington, DC.

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- Zhi, W. L. Li, J. Kaye, W. Dong, W. Brown, C. Steefel, and K. Williams. 2018. Understanding Contrasting Concentration-discharge (CQ) Behaviors in a Seasonally Snow-covered Watershed, American Geophysical Union Fall Meeting, Washington, DC.
- Amsili, J.* and J.P. Kaye. 2017. Root traits of cover crop monocultures and mixtures. Soil Science Society of America Annual Meeting, Tampa Florida.
- Schipanski, M.*, S. Rosenzweig, and J.P. Kaye 2017. A nutrient-centric view of rhizosphere priming: corn mediation of cover crop litter decomposition and nitrogen cycling. Soil Science Society of America Annual Meeting, Tampa Florida.
- Saha, D., A. Kemanian, J.P. Kaye, F. Montes, and J. Wallace. 2017. Co-locating fresh cover crop residues with manure triggers nitrous oxide emissions from organic cropping systems. Soil Science Society of America Annual Meeting, Tampa Florida.
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- Isbell, S., J.P. Kaye, and *A. Morris*. 2017. Interseeding cover crops: nitrogen supply and retention in a reduced-tillage organic systems experiment. Ecological Society of America Annual Meeting, Portland, OR.
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- Orr, L., T. Adams, D. Eissenstat, and J.P. Kaye. 2016. Topographic controls on fine root distribution in a small temperate watershed. Ecological Society of America Annual Meeting, Ft. Lauderdale, FL.
- Morris, A.*, and J.P. Kaye. 2016. Managing Inter-Seeded Cover Crops and Tillage to Decrease Nitrate Leaching and Nitrous Oxide Emissions from Agricultural Soils. ASA/CSSA/SSSA International Annual Meetings. Phoenix, AZ.
- White, C.M.* A. Kemanian, and J.P. Kaye. 2016. Predicting Corn Yield with a Soil Organic Matter Test and Cover Crop Nitrogen Credits. ASA/CSSA/SSSA International Annual Meetings. Phoenix, AZ.
- Weitzman, J.N.* and J.P. Kaye. 2016. N budget and topographic controls on N₂O in a shale watershed with high atmospheric N deposition. AGU Fall Meeting. San Francisco, CA (Abstract B31F-0529).
- Hill, L.Z.*, Kaye, J.P., and S.L. Brantley. 2016. Soil CO₂ and O₂ concentrations in shale and sandstone catchments of central Pennsylvania. AGU Fall Meeting. San Francisco, CA (Abstract B21I-0548).
- Finney, D.M.*, *C.M. White*, and J.P. Kaye. 2015. Using diverse cover crop cocktails to provide agroecosystem services. ASA/CSSA/SSSA International Annual Meetings. Minneapolis, MN.
- Finney, D.M.* and J.P. Kaye. 2015. Quantitative approaches to multifunctionality assessment in agroecosystems. Entomological Society of America International Annual Meetings. Minneapolis, MN.
- Weitzman, J.* and J.P. Kaye. 2015. Variability in soil nitrogen retention across forest, urban, and agricultural land uses. Ecological Society of America Annual Meeting. Baltimore, MD.
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- Gu, X., *E. Hasenmueller*, J. Kaye, and S. Brantley. 2014. Role of Tree Roots on Porosity Evolution during Shale Weathering. Goldschmidt Conference, Sacramento, California.
- Grantham, A.*, J.P. Kaye, M. Hall, and D. Schrenker. 2014. Organic perennial pastures outperform organic annual pastures with lower N losses and equivalent yields when exposed to drought, extreme rainfall and simulated grazing. Soil Science Society of America Meetings. Long Beach, CA.
- Schipanski, M.*, M. Barbercheck, *D.M. Finney*, R. Smith, J.P. Kaye, D. Mortensen, and J. Harper. 2014. Rotation strategies for balancing multiple management objectives in organic cropping systems. Agronomy Society of America Meetings, Long Beach, CA.
- Schrenker, D., M.H. Hall, *A. Grantham*, J.P. Kaye, and R.H. Skinner. 2014. Potential of warm-season annual pastures in rotation with corn silage for organic dairies. Agronomy Society of America Meetings, Long Beach, CA.
- White, C.M.*, A.R. Kemanian, and J.P. Kaye 2014. Implications of carbon saturation model structure for simulated nitrogen mineralization dynamics. Soil Science Society of America Meetings. Long Beach, CA.
- White, C.M.*, T. DuPont, D. Hartman, M. Hautau, and J.P. Kaye 2014. Cover crop mixtures can improve nitrogen retention and supply in organic grain cropping systems. Agronomy Society of America Meetings, Long Beach, CA.
- Weitzman, J.* and J.P. Kaye 2014. A deeper understanding: Using the depth distribution of N₂O in soil to improve predictions of soil-atmosphere emissions. Soil Science Society of America Meetings. Long Beach, CA.
- Weitzman, J.*, and J. Kaye. 2014. The depth distribution of N₂O, O₂, and CO₂ along topographic gradients at the Shale Hills CZO. Critical Zone National All Hands Meeting, Fish Camp, CA.
- Schipanski, M.*, R. Smith, T. Pisani-Gareau, R. Jabbour, *D. Lewis*, M. Barbercheck, D. Mortensen, and J. Kaye. 2013. The structure of multivariate relationships influencing crop yields during the transition to organic management. Ecological Society of America Meetings, Minneapolis
- Grantham, A.*, J. Kaye, M. Hall, and D. Schrenker. 2013. Market, policy and climate changes as drivers of ecological and biogeochemical shifts in dairy ecosystems. Ecological Society of America Meetings, Minneapolis
- Jin, L., N. Ogrinc, T. Yesavage, *E. Hasenmueller*, L. Ma, J. Kaye, S. Brantley. 2013. Using C and S isotopes to elucidate carbonic versus sulfuric acid reaction pathways during shale weathering in the Susquehanna Shale Hills Critical Zone Observatory. Fall Meeting, AGU, San Francisco.
- Hasenmueller, E.*, L. Jin, L. Smith, M. Kaye, H. Lin, S. Brantley, J. Kaye. 2013. Depth and Topographic Controls on Soil Gas Concentrations and Fluxes in a Small Temperate Watershed. Fall Meeting, AGU, San Francisco.
- Finney, D.* and J. Kaye. 2013. Cover crop cocktails enhance nitrogen management. Soil Science Society of America Meeting, Tampa, Florida
- Saha, D., F. Montes, J. Kaye, P. Adler, B. Rau, A. Kemanian 2013. How many samples are needed to estimate the annual N₂O flux from soils? Soil Science Society of America Meeting, Tampa, Florida
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- Kizewski, F. R., J. P. Kaye, and C. E. Martinez. 2012. Nitrate transformation and immobilization: effects of biotic/abiotic, oxic/anoxic conditions. 22nd V.M. Goldschmidt Conference, Montreal, Canada.
- Saha, D., A. Kemanian, B. Rau, J. Kaye, and P. Adler. 2012. Landscape control of nitrous oxide emission in biomass crops in the Ridge and Valley Ecoregion. Soil Science Society of America Meeting, Cincinnati, Ohio
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- Castellano, M.*, J. Kaye, H. Lin, and J. Schmidt. 2011. Carbon saturation concepts and nitrogen retention theory. Soil Science Society of America Meetings, San Antonio.
- Schipanski, M.*, S. Stephanie, M. Barbercheck, M. Douglas, *D. Finney*, K. Haider, J. Kaye, D. Mortensen, J. Tooker, and *C. White*. 2011. A conceptual framework for evaluating multifunctionality of cover crops in agroecosystems. Soil Science Society of America Meetings, San Antonio.
- McDaniel, M.D.*, J.P. Kaye, M.V. Bruns, and M.W. Kaye. 2011. Soil extracellular enzyme activities from a forest harvest and climate manipulation experiment in central Pennsylvania. Enzymes in the Environment Conference, Bad Nauheim, Germany
- Wagner, R., M.W. Kaye, J. Kaye, M. Abrams. 2011. Growth and physiological responses of deciduous tree seedlings to three years of increased temperature and precipitation treatments. Ecological Society of America, Austin
- Watson, J., *Lewis, D.*, Kaye, J., and S. Duiker. 2010. Application of S – Theory to Evaluate the Effects of Tillage and Cover Crops On Soil Quality. Soil Science Society of America Meeting, Long Beach, November.
- Wagner, R. M.W. Kaye, J.P. Kaye, and M.D. Abrams. 2010. Seedling physiological responses to increased temperature and precipitation in a northeastern deciduous forest. Ecological Society of America Meeting, Pittsburgh, August.
- Weitzman, J.N.*, A.M. Pfeiffer, and J.P. Kaye. 2010. Changes in soil carbon and nitrogen stability and aggregation across urban, forest, and agricultural ecosystems Ecological Society of America Meeting, Pittsburgh, August.
- Brimmer, R.*, A.M. Pfeiffer, and J.P. Kaye. 2010. An assessment of soil C and N pools in limestone-derived soils across diverse land uses in central Pennsylvania. Ecological Society of America Meeting, Pittsburgh, August.
- McDaniel, M.D.*, J.P. Kaye, M.A. Bruns, and M.W. Kaye. 2010. Ecosystem disturbance in a warmer and wetter northeastern US: How will soil C and N losses and microbial communities respond to forest harvest in the future? Ecological Society of America Meeting, Pittsburgh, August.
- Lewis, D.B.*, and J.P. Kaye. 2010. Rapid immobilization of inorganic nitrogen in stable soil organic matter of forest ecosystems: Reviving the successional N retention hypothesis Ecological Society of America Meeting, Pittsburgh, August.
- Castellano, M.*, J.P. Kaye, H. Lin. and J. Schmidt. 2009. Biophysical Controls On Ecosystem Nitrogen Cycling along a Soil Texture Gradient. Soil Science Society of America meetings, Pittsburgh
- Castellano M.*, J.P. Kaye, H. Lin, and J.P. Schmidt. 2009. Reactive nitrogen retention and flushing along a soil texture gradient. Ecological Society of America Meeting, Albuquerque, August.

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- Jin, L., D. Andrews, N. Kaiser, J.P. Kaye, H. Lin, and S. Brantley. 2009. Nutrient dynamics and its influence on rock-water interaction at Shale Hills catchment, a critical zone observatory at Pennsylvania, USA. Geological Society of America meetings. Portland, October.
- Kolb, T.E., S. Dore, M.C. Montes-Helu, B.W. Sullivan, S.E. Eckert, J.P. Kaye, S.C. Hart, G.W. Koch, A. Finkral, and B.A. Hungate. 2009. Carbon and water fluxes from ponderosa pine forests disturbed by wildfires and thinning. Ecological Society of America Meeting, Albuquerque, August.
- Kurth, V., S.C. Hart, P.Z. Fulé, and J.P. Kaye. 2009. Nitrogen dynamics along a 33-year stand-replacing wildfire chronosequence in southwestern ponderosa pine forests. Ecological Society of America Meeting, Albuquerque, August.
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- Wagner, R., M. Kaye, J. Kaye, and M. Abrams. 2009. Acclimation and adaptation of deciduous tree seedlings to a warmer, wetter climate. Ecological Society of America Meeting, Albuquerque, August.
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- Castellano, M.J. and J.P. Kaye. 2008. Variation in soil solution nitrogen is a function of clay content. 1st International Hydrogeology Conference, University Park, July.
- Kurth, V., J.P. Kaye, S.C. Hart, P.Z. Fule, S. Haase, and C. Ross. 2008. Fire management and carbon storage in ponderosa pine forests. Natural Resource Extension Professionals conference. Madison, Wisconsin, May.
- Bruns, M.A., McCoy, M., Adviento-Borbe, A., and Kaye, J.P. 2007. Toward an understanding of mechanisms leading to peak soil N₂O emissions during midseason corn production. Soil Science Society of America meetings, New Orleans
- Castellano, M., Walker, C., Schmidt, J., Dell, C., Kaye, J., and Lin, H. 2007. Soil nutrient transport and transformation during extreme water table fluctuations in an agro-ecosystem. Soil Science Society of America meetings, New Orleans
- Cook, J, Gallagher, R, Kaye, J.P., Lynch, J., Starovoytov, A., and McCoy, W. 2007. Improving the synchrony of hairy vetch (*Vicia villosa*) nitrogen release for corn (*Zea mays*) growth. Soil Science Society of America meetings, New Orleans
- Dore, S., M. Montes-Helu, T.E. Kolb, B. W. Sullivan, W. D. Winslow, S. C. Hart, J. P. Kaye, G. W. Koch, B. A. Hungate. 2007 Carbon Dioxide and energy exchange in disturbed southwestern ponderosa pine forests. December meeting of American Geophysical Union.
- Fricks, B., J.P. Kaye, and R. Siedel. 2007. Abiotic reactions play a role in nitrate retention in three agroecosystems. Presented at the Ecological Society of America meeting, San Jose, August 2007.
- Fricks, B., J.P. Kaye, R. Siedel, and P Hepperly. 2007. Historic and present nitrate loss in a long-term cropping systems trial. Presented at the Soil Science Society of America meeting, New Orleans, November 2007.
- Hall, S.J., R. Sponseller, N.B. Grimm, J.P. Kaye, and J.O. Allen. 2007. Ecosystem response to the urban atmosphere in the Sonoran Desert. Ecological Society of America, August, San Jose, California.
- McCoy, M.T., A. Adviento-Borbe, J. P. Kaye, and M. A. Bruns. 2007, Diversity of *amoA* sequences and comparison of N cycle processes in agricultural soils fertilized with inorganic N or dairy manure. American Society of Microbiology meeting, Toronto, May 2007 and Environmental Chemistry Student Symposium at Penn State.

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- Kaye, J., M. Kaye, S. Eckert, P. Fule, S. Hart, S. Haase, and K. Prewit. 2006. Accumulation of carbon and nutrients in Ponderosa pine trees during 120 years of fire exclusion. Soil Science Society of America Meetings, Indianapolis, IN.
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- Richard, T., E. Wheeler, G. Varga, J.P. Kaye, and M.A. Bruns. 2005. Strategies for reducing gas emissions from dairy farms. Penn State Dairy Cattle Nutrition Workshop, Grantville, PA.
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- Kaye, J.P., Romanya, J. and R. Vallejo. 2005. Carbon sequestration following stand replacing fires in Spanish woodlands. USDA Greenhouse Gas Symposium, Baltimore, MD.
- Grimm, N.B., J.P. Kaye, S.J. Hall, J.O. Allen, and D.B. Lewis. 2004. A distinct urban biogeochemistry? Ecological Society of America, Portland, OR and CAP LTER Research Symposium, Tempe, AZ.
- Briggs, J.M., M. Hegmon, J.P. Kaye, K.W. Kintigh, K.A. Spielman, and A.T. Smith. 2004. Legacies on the landscape: Integrating ecology and archaeology to understand long-term human-ecosystem interactions. Ecological Society of America, Portland, OR.
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- Hart, S.C., S.I. Boyle, J.P. Kaye, D.R. Guido, J. Thomas. 2003. Long-term effects of restoration on the function of a ponderosa pine - bunchgrass ecosystem. Southwest Fire Initiative, Flagstaff, AZ and U.S. Soil Ecology Conference, Palm Springs, CA.
- Thomas, J, S.I. Boyle, D. R. Guido, S.C. Hart, and J.P. Kaye. 2003. Long-term effects of restoration on soil respiration in a ponderosa pine – bunchgrass ecosystem. Arizona – Nevada Academy of Sciences, Flagstaff, AZ.

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- Kaye, J.P. and I.C. Burke. 2002. Carbon fluxes in an urban ecosystem compared to adjacent grasslands and agriculture. Ecological Society of America, Tucson, AZ.
- Hart, S.C., J.P. Kaye, W.W. Covington, P.Z. Fulé, and M.M. Moore. 2002. Water, nutrient, and carbon fluxes following ecological restoration of southwestern ponderosa pine forests. Ecological Society of America, Tucson, AZ.
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- Burke, I.C., J.P. Kaye, S. Bird, S. Hall, R. McCulley, and G. Sommerville 2001. Evaluating and testing models of terrestrial biogeochemistry: The role of temperature in controlling decomposition. Institute of Ecosystem Studies, Cary Conference IX, Millbrook, NY.
- Kaye, J.P., R.C. Resh, M.W. Kaye, and R. Chimner 1999. Interactions among C, N, and P cycles in mixed stands of *Eucalyptus* and *Albizia*. Ecological Society of America, Spokane, WA.
- Hart, S.C., W.W. Covington, M.M. More, P.Z. Fule, and J.P. Kaye 1998. Historical reconstruction of structure and function of ponderosa pine/bunchgrass ecosystems. Ninth North American Forest Soils Conference.
- Kaye, J.P. and S.C. Hart. 1997. Succession and restoration effects on soil respiration in a ponderosa pine-bunchgrass ecosystem. Soil Science Society of America, Anaheim, CA.
- Kaye, J.P. and S.C. Hart 1997. Postsettlement tree invasion alters belowground processes in a ponderosa pine-bunchgrass community. Ecological Society of America, Albuquerque, NM.
- Boone, R.D. K.J. Nadelhoffer, J.P. Kaye, and R.D. Bowden 1994. Biological and physical controls on soil organic matter storage: the DIRT experiment. International Ecology Meeting, Manchester, UK.
- Canary, J.D., R.D. Boone, K.D. Nadelhoffer, R.D. Bowden, and J.P. Kaye 1996. Estimates of above- and belowground litter inputs to a forest soil using CO₂ fluxes as measured by two methods. Ecological Society of America, Providence, RI.
- Kaye, J.P. and S.C. Hart 1996. Alteration of the nitrogen cycle following ecological restoration of a ponderosa pine forest. Ecological Society of America, Providence, RI.
- Nadelhoffer, K.D., R.D. Boone, J.D. Canary, and J.P. Kaye 1995. Effects of temperature on tree root and microbial respiration in a temperate forest soil. Soil Science Society of America, St. Louis, MO.

INVITED SEMINARS

- Kaye, J.P., C. Hodges, and M. Kopp. 2023. Controls on soil CO₂ at the Shale Hills Critical Zone Observatory. Northern Arizona University. Center for Ecology Science and Society.
- Kaye, J.P. 2019. Landscape and BMP nitrogen processes. Chesapeake Bay Program Science and Technical Advisory Committee Workshop on “Assessing the Environment in Outcome Units (AEIOU): Using Eutrophying Units for Management”. Annapolis, MD. March 21, 2019.
- Kaye, J.P. 2017. Using cover crops to adapt to climate change. Chesapeake Bay Program Science and Technical Advisory Committee workshop on “Monitoring and assessing impacts of changes in weather patterns and extreme events on BMP siting and design. Annapolis, MD. September 7, 2017.
- Schipanski, M., S. Rosenzweig, D. Finney, and J. Kaye. 2016. Plant-mediated nitrogen cycling in agricultural systems. 19th Annual Nitrogen Workshop, Skara Sweden 2016. Invited keynote presentation.

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- White, C.M., D.M. Finney, E. Murrell, B. Baraibar-Padro, J. Hinds, M.C. Hunter, M. Barbercheck, D. A. Mortensen, J.P. Kaye 2016. Ecosystem service provisioning by cover crop mixtures and monocultures in an organic feed and forage cropping system. Invited contribution to the symposium--Can cover crop mixtures maximize agro-ecosystem services? Phoenix, AZ.
- Kaye, J.P. 2016. It isn't easy applying biodiversity-ecosystem function theory to agriculture. Penn State Ecology Discussions seminar series.
- Kaye, J.P. 2014. Using biodiversity-ecosystem function relationships to design multifunctional agroecosystems. Villanova University.
- Kaye, J.P. 2013. Using ecology to design multifunctional agroecosystems. Universidad Politecnica de Madrid.
- Kaye, J.P. 2013. Using ecology to design multifunctional agroecosystems. Department of Food Sciences, Penn State.
- Kaye, J.P., M.W. Kaye, C.R. Rollinson, and M. D. McDaniel. 2011. Adding Insult to Injury: How will climate change alter plant and soil recovery following forest harvesting. Cary Institute of Ecosystem Studies.
- Kaye, J.P. 2009. Ecosystem response to the urban atmosphere in the Sonoran Desert. University of Maryland-Baltimore County.
- Kaye, J.P., J. Romania, M. Kaye, R. Vallejo, S. Hart, and P.Z. Fulé. 2009. Resilience of carbon storage to fire-regime change: contrasting examples from woodlands in Arizona and Spain. Ecological Society of America Meeting, Albuquerque, August.
- Kaye, J.P. 2008. Legacies in soils and in scientists. Colorado State University, Graduate Degree Program in Ecology, Distinguished Alumni Seminar, October 2008.
- Kaye, J.P. 2008. Can soil microbes benefit from urban organic carbon deposition?, October 2008, Department of Environmental Engineering, Penn State.
- Kaye, J.P. 2008. Tradeoffs between fire management and carbon storage in ponderosa pine forests. School of Forest Resources, Penn State.
- Kaye, J. 2008. Ghosts of agriculture past in the soils of Phoenix, Arizona. University of Pennsylvania, Philadelphia, PA.
- Kaye, J.P. 2007. Ghosts of agriculture past in the soils of Phoenix, Arizona. Cornell University, Ithaca, NY.
- Hall, S., N. Grimm, J.P. Kaye, J. Allen, and D. Lewis. 2006. Ecosystem Responses to Urbanization Across the Central Arizona-Phoenix (CAP) LTER Site. American Geophysical Union, Baltimore, MD.
- Kaye, J.P. 2006. Will urban ecology lead to new ecological theory or just new field sites? University of Pittsburgh, Pittsburgh, PA.
- Kaye, J.P. 2005. Will ecologists or geochemists make the next big discoveries in the nitrogen cycle? Pennsylvania State University Inter-College Degree Program in Ecology, University Park, PA.
- Kaye, J.P. 2004. Linking land management to nitrogen dynamics at regional to microbial scales. Pennsylvania State University. University Park, PA.
- Kaye, J.P. 2003. From fire suppression to prescribed fire in southwestern ponderosa pine forests. Jornades sobre Incendis Forestals i Recerca. Solsona, Spain.
- Kaye, J.P. 2003. Urban ecosystem ecology in Colorado and Arizona. Northern Arizona University, Flagstaff, AZ.
- Kaye, J.P. 2002. The changing nitrogen cycle of terrestrial ecosystems, Arizona State University, Tempe, AZ.
- Kaye, J.P. 2002. Restoring ecosystem function to ponderosa pine forests after 120 years of fire suppression. University of Alicante, Spain.
- Kaye, J.P. 2001. The changing nitrogen cycle of terrestrial ecosystems. University of Utah, Salt Lake City, UT.
- Kaye, J.P. 2000. Controls on soil nitrogen retention: diving into recalcitrant pools. Cornell University, Ithaca, NY.

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Kaye, J.P. 2000. Controls on soil nitrogen retention: diving into recalcitrant pools. Institute of Ecosystem Studies, Millbrook, NY.

PRE-PUBLICATION AND PROPOSAL REVIEWER FOR:

Biogeochemistry, Bioscience, Canadian Journal of Forest Research, DOE – NICCR, Ecology, Ecological Applications, Ecological Monographs, Ecosystems, Forest Ecology and Management, Frontiers in Ecology and the Environment, National Science Foundation (Ecosystems, Biocomplexity, and International Programs), Nature, Oecologia, Plant and Soil, Soil Science Society of America Journal, Tree Physiology, Tropical Ecology, Urban Ecosystems, USDA NRI Managed Ecosystems Program, USDA NRI Soil Processes Program, USDI National Park Service

GRANT REVIEW PANEL

USDA NRI Managed Ecosystems Program
USDA NRI Soil Processes Program
USDA OREI
NSF DEB Ecosystem Studies

EDITORIAL BOARD

Oecologia, 2005-2019
Ecological Applications, 2019- present
Ecosphere, 2020-present
Ecological Monographs, 2021

MEMBERSHIP

Ecological Society of America; Soil Science Society of America; American Geophysical Union;

ADVISORS

M.S.: Dr. Stephen C. Hart; Ph.D.: Dr. Dan Binkley

ADVISEES (my students and postdocs)

Rachel Cruz-Perez, Ph.D. Ecology, began August 2022
Michael Gomez-Sanchez, Postdoc, began August 2022
Whitney Lisenbee, Postdoc, August 2020-January 2022
Madeline Luthard, Ph.D. Ecology, began fall 2020
Marissa Kopp, Ph.D. Ecology, began fall 2019
Kathleen Arrington, Postdoc, began August 2019
Yuting He, Postdoc, began December 2019-August 2020
Shannon Wray, M.S. Soil, completed spring 2021
Caitlin Hodges, Ph.D., Soils, completed summer 2021
Catalina Mejia, M.S., Soils, completed summer 2020
Ebony Murrell, Postdoc, completed 2020
Benjamin Dillner, M.S., Ecology, completed summer 2019
Joseph Amsili, M.S. Soils, completed summer 2018
Sarah Isbell, Ph.D. Ecology, completed spring 2022
Andrew Morris, MS Soils, completed spring 2017
Lillian Hill, M.S. Ecology, completed spring 2017
Elizabeth Hasenmueller, Postdoc, fall 2012-winter 2013
Mac Burgess, Postdoc, spring 2012-winter 2013
Meagan Schipanski, Postdoc, 2011 – winter 2013
Alison Grantham, Ph.D. Ecology, completed spring 2015

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Denise Finney, Ph.D. Ecology, completed spring 2015
Charlie White, Ph.D. Soils, completed fall 2015
Julie Weitzman, M.S. and Ph.D. Soils, completed fall 2016
Rachel Brimmer, Ph.D. Soils, began fall 2008, DNF
Marshall McDaniel, Ph.D. Soils, completed winter 2010
Mike Castellano, Ph.D. Soils, completed winter 2009
Chris Ross, M.S. Ecology, completed summer 2008
Michelle Gresalfi, M.S. Ecology, completed spring 2007
Barbara Fricks, M.S. Soils, completed summer 2007
Arlene Adviento-Borbe, Postdoc, summer 2006-summer 2008
David Lewis, Postdoc., fall 2005-fall 2009
Tracy Johns, M.S., ASU, completed spring 2006
Kari Morehouse, M.S., ASU, completed summer 2005

CO-ADVISEES

Zoelie Rivera-Ocasio, Ph.D., Soil Science and Biogeochemistry, in progress (Primary advisor Charlie White)
Ryan Trexler, Ph.D., Ecology and Biogeochemistry, in progress (Primary advisor: Estelle Couradeau)
Curt McConnell, Ph.D., Ecology and Biogeochemistry, completed 2023
(Primary advisor: Armen Kemanian)
Beth Hoagland, Ph.D., Geosciences and Biogeochemistry, completed 2019
(Primary advisor: Tess Russo)
Debasish Saha, Ph.D., Soil Science and Biogeochemistry, completed spring 2015
(Primary advisor: Armen Kemanian)

PLACEMENT OF MY PHD STUDENTS AND POSTDOCS

Name	Position in my lab group	Placement
Dr. Elizabeth Hasenmueller	Postdoc	Associate Professor, Saint Louis University
Dr. Meagan Schipanski	Postdoc	Associate Professor, Colorado State Univ.
Dr. Mac Burgess	Postdoc	Associate Professor, Montana State Univ.
Dr. David Lewis	Postdoc	Associate Professor, Univ. of South Florida
Dr. Arlene Adviento-Borbe	Postdoc	Project Scientist, UC Davis
Dr. Ebony Murrell	Postdoc	Lead Scientist, Crop Protection Ecology, The Land Institute
Dr. Whitney Lisenbee	Postdoc	Assistant Professor, University of Georgia
Dr. Michael Castellano	Ph.D. Student	Professor, Iowa State University
Dr. Marshall McDaniel	Ph.D. Student	Associate Professor, Iowa State University
Dr. Charles White	Ph.D. Student	Assistant Professor, Penn State University
Dr. Denise Finney	Ph.D. Student	Associate Professor, Ursinus College
Dr. Alison Grantham	Ph.D. Student	Founder, Grow Well Consulting
Dr. Julie Weitzman	Ph.D. Student	Research Scientist, University of Pittsburgh
Dr. Caitlin Hodges	Ph.D. Student	Assistant Professor, University of Oklahoma
Dr. Sarah Isbell	Ph.D. Student	Analyst, PASA Sustainable Agriculture
Dr. Curt McConnell	Ph.D. Student (co-advised)	Sustainability Scientist, IndigoAg
Dr. Debasish Saha	Ph.D. Student (co-advised)	Assistant Professor, University of Tennessee-Knoxville

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Dr. Beth Hoagland	Ph.D. Student (co-advised)	NSF Postdoctoral Fellow, Colorado School of Mines
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AWARDS RECEIVED BY GRADUATE STUDENTS WHOSE RESEARCH I ADVISE

Rachel Cruz-Perez, Scarlett Fellowship, 2022-2023
Rachel Cruz-Perez, McKenna Fellowship, 2022-2023
Madeline Luthard, McKenna Fellowship, 2023
Madeline Luthard, USDA NIFA Predoctoral Graduate Research Fellowship, 2023-2026.
Madeline Luthard, 1st place poster, SSSA Annual Meetings, Cover Crop Section, 2022
Madeline Luthard, University Graduate Fellowship, 2020-2021
Marissa Kopp, Victoria Braithwaite Research Excellence Award, Ecology IGDP, 2023.
Marissa Kopp, Best Overall Student Paper Award, SSSA Annual Meetings, Forest Range and Wildland Soils Division, 2022
Marissa Kopp, USDA NIFA Predoctoral Graduate Research Fellowship, 2022-2025
Marissa Kopp, College of Agricultural Sciences Research Grant, 2022
Marissa Kopp, Scarlett Fellowship, 2019-2020
Marissa Kopp, McKenna Fellowship, 2019-2020, renewed 2020-2021
Caitlin Hodges, USDA NIFA Predoctoral Graduate Research Fellowship, 2020-2022
Caitlin Hodges, Critical Zone SAVI International Fellowship, 2019
Caitlin Hodges, Distinguished University Graduate Fellowship, 2017-2018
Caitlin Hodges, McKenna Fellowship 2017-2018, renewed 2018-2019
Caitlin Hodges, Critical Zone SAVI Fellowship, 2018
Catalina Mejia, Annie's Homegrown Sustainable Agriculture Scholarship, 2018
Catalina Mejia, Bunton Waller Fellowship, 2017-2018
Catalina Mejia, McKenna Fellowship 2017-2018, renewed 2018-2019
Joseph Amsili, Bunton Waller Fellowship, 2016-2017
Joseph Amsili, College of Agricultural Sciences Research Grant, 2018.
Curt McConnell (co-advised), USDA NIFA Predoctoral Research Fellowship 2020-2022
Curt McConnell (co-advised), Huck Institutes Graduate Research Grant, 2019
Sarah Isbell, Alumni Association Dissertation Award, 2021.
Sarah Isbell, USDA NE SARE Graduate Research Fellowship, 2016-2017.
Sarah Isbell, Annie's Homegrown Sustainable Agriculture Scholarship, 2016
Sarah Isbell, College of Agricultural Sciences Research Grant, 2018.
Sarah Isbell, Second Place Oral Presentation in Agroecology, ASA National Meeting, 2018
Sarah Isbell, USDA NIFA Predoctoral Graduate Research Fellowship, 2019-2021
Beth Hoagland (co-advised), NSF Graduate Research Fellow 2016-2018
Andrew Morris, Penn State Distinguished Masters Thesis Award, Spring 2017
Andrew Morris, NSF Graduate Research Fellowship, Fall 2016
Andrew Morris, Annie's Homegrown Sustainable Agriculture Scholarship, 2016
Debasish Saha, 1st place presentation in Physical Sciences and Mathematics, PSU Graduate Research Exhibition. Spring 2015
Morgan Weischman, USDA/USDI Graduate Research Fellowship, 2013-2014.
Denise Finney, Intercollege Degree Program Graduate Outreach Award, 2014.
Denise Finney, USDA NIFA Graduate Research Fellowship, Fall 2012-Fall 2014.
Denise Finney, College of Agricultural Sciences Research Grant, 2011.
Denise Finney, Penn State Distinguished University Graduate Fellowship, 2010-2011.
Denise Finney, ARCS-Foundation Graduate Fellowship, 2010-2013.
Denise Finney, USDA NE SARE Graduate Research Fellowship, 2010-2011.
Alison Grantham, Penn State University Graduate Fellowship, Fall 2011-Spring 2012.
Alison Grantham, NSF Graduate Research Fellowship, Fall 2012-Fall 2015.
Julie Weitzman, 1st place poster, Gamma Sigma Delta Research Symposium, Spring 2014.

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Julie Weitzman, USDA NIFA Graduate Research Fellowship, Fall 2014-Fall 2016.

Julie Weitzman, College of Agricultural Sciences Research Grant, 2013.

Julie Weitzman, Center for Environmental Geochemistry and Genomics Research Fellowship, Summer 2012.

Julie Weitzman, Honorable Mention, NSF Graduate Research Fellowship Program, 2010.

Marshall McDaniel, 2nd place presentation in the physical sciences, Penn State Graduate Research Symposium, Spring 2010.

Michael Castellano, NOAA Graduate Research Fellowship, 2007-2010.

Michael Castellano, Pennsylvania Space Grant Fellowship, Fall 2009.

Michael Castellano, NSF Doctoral Dissertation Improvement Grant, Fall 2009.

Michael Castellano, Outstanding Graduate Student Award, Environment and Natural Resources Institute, 2009.

Michael Castellano, 1st place presentation in agriculture, Environmental Chemistry Student Research Symposium, Spring 2008.

Chris Ross, 2nd place presentation in biogeochemistry, Environmental Chemistry Student Research Symposium, Spring 2008.

Barbara Fricks, Congressional Science Intern, Soil Science Society of America, Summer 2007- Fall 2008.

Barbara Fricks, Center for Environmental Chemistry and Geochemistry Research Fellowship, Summer 2006.

GRADUATE STUDENT COMMITTEES (I served on the graduate committee of these students)

Marali Karla, PhD, Civil Engineering, in progress

Joe Ono-Raphael, PhD, Applied and Environmental Plant Sciences, in progress

Emma Rice, PhD, Ecology in progress

Jennifer Harris, PhD, Ecology, in progress

Paniz Mohammadpour, PhD, Civil Engineering, completed 2023

Denise Alving, PhD, Forest Resources, in progress, started 2019

Allison Koehle, MS, AEPS, started fall 2020, completed 2022

Elizabeth Davidson-Lowe, PhD, Entomology, completed 2021

Perri Silverhart, MS, Geosciences, completed 2019

Caylon Yates, PhD, Ecology, completed 2023

Ted Primka, PhD, Ecology, completed 2021

Ismail Szink, MS, Ecology, in progress

Warren Reed, PhD, Ecology, completed 2022

Brady Boyer, MS, Ecology, completed 2019

Wei Zhi, Ph.D., Energy and Mineral Engineering, completed 2019

Mitch Hunter, Ph.D., Agronomy, completed 2018

Abbe Hamilton, M.S., Agronomy, completed 2016

Xin Gu, Ph.D. Geoscience, completed 2018

Mandi Martino, Ph.D. Geosciences, completed 2014

Virginia Pravia, Ph.D., Agronomy, completed 2018

Emily Duncan, Ph.D., Soil Science and Biogeochemistry, completed 2016

Andrew Hunt, Ph.D., Soil Science, in progress

Vanathi Duraisamy, Ph.D., Agronomy, in progress

Xuan Yu, Ph.D., Civil and Environmental Engineering, completed 2014

Ashlee Dere, Ph.D., Geosciences, completed 2014

Larry York, Ph.D. Ecology, completed 2014

Morgan Weichmann, M.S., Ecology, completed 2014

Denyse Schrenker, M.S., Agronomy, completed 2014

Hengjing Yan, Ph.D. Civil and Environmental Engineering, completed summer 2013

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Lauren Smith, M.S., Ecology, completed summer 2013
Marc Goebel, Ph.D., Ecology, completed summer 2013
Jessica Moon, Ph.D., Ecology, completed spring 2013
Rebekah Wagner, Ph.D. Ecology, completed winter 2012
Tanushree Dutta, Ph.D., Soils, completed summer 2011
Kevin Mueller, Ph.D., Ecology, completed spring 2011
Danielle Andrews, Ph.D., Soils, completed winter 2011
Dan Heggenstaller, M.S., Forest Sciences, completed spring 2010
Aaron Diefendorf, Ph.D., Geosciences, completed fall 2010
Marlyse Williams, Ph.D., Ag and Bio Engineering, completed summer 2010
Chris Junium, Ph.D., Geosciences, in progress, completed winter 2009
Anna Starovtoytov, M.S., Ecology, completed summer 2009
Justine Cook, M.S., Agronomy, completed summer 2009
David Verbee, M.S., Agronomy, completed spring 2009
Katherine Gordon, M.S., Ecology, completed spring 2009
Ashlee Dere, M.S. Soils, completed summer 2009
Qing Zhu, Ph.D., Soil Science, completed winter 2009
Dawn Sedorovich, Ph.D., Ag and Bio Eng., completed winter 2007
Jenny Marie Edwards, M.S. Horticulture, completed fall 2005
Jennifer Harden, M.S., ASU, completed winter 2004
Tamara Harms, M.S. ASU, completed spring 2004

UNDERGRADUATE RESEARCHERS (undergraduates conducting research in my lab)

Katherine Chu, Honors Thesis, 2024
Maria Giarrusso, 2023
Ryan Gaydos, FURP, 2023
Sarah Brown, 2022-2023
Amanda Rill, 2022-2023
Lindsay Bell, 2021-2022
MaryBeth Gavin, 2021-2023
Megan Kownurko, 2021-2023
Trisha Poorbaugh, WISER, 2019
Taren Rowles, FURP, 2018
Elise Elizondo, MURE, spring 2017
Katherine Hayden, spring 2016-
Emily Soll, fall 2015-spring 2016
Nancy Bao, WISER, spring 2016-
Drew Paul, fall 2015- spring 2016
Nicole Kubizki, fall 2014- spring 2015
Matthew Rider, summer 2014-fall2015
Mary Lemmon, summer 2014-spring 2016
Betsy Nottingham, summer 2014
Sydney Laudenslager, summer 2012-spring2014
Lauren Kaminsky, spring 2014-fall 2014
Katherine Speicher, spring 2014-fall 2014
Erin Hill, spring 2013-winter 2013
Juan Rodriguez, Monsegur summer 2013 (SROP)
Laura Davis, spring 2012-fall2013
Marianne Kochin, spring 2012-fall 2013
Briana Yablonski, spring 2013 – fall 2014
Bret Turner, spring 2013-present

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Kristen Kyler, fall 2011 – spring 2012
Jena Trolio, fall 2011-spring 2014
Sara Jones, summer 2012 – summer 2013
Lena Harper, fall 2009-fall 2012
Irena Gorski, fall 2009
Avery Dunn, 2010
Brian Creamer, summer 2010
Kristen Jurinko, 2009
Melanie Moore, 2009
Logan Zugay, 2009-2010
Erica Dreibelbis
Nicholas Kaiser, REU, summer 2009
Andrew Wreschnig, REU, summer 2008
Lauren Seiler, undergraduate honors thesis, spring 2008-spring 2009
Lori Ann Clayton, summer 2008
Hunter Stambaugh, 2008
Doug Manning, 2007
Michelle Knabb, fall 2007 – spring 2010
Catherine Pierce, spring 2007 – fall 2008
Krystal Bealing, summer 2006 – spring 2010
Kristine Jimenez, winter 2005 – fall 2007
Amanda Conover, winter 2005 – spring 2007
James Gunn, ASU, summer 2004
Merry Spradling, ASU, winter 2004
Kelly Balcarczyk, ASU, summer 2003
Sarah Shaffer, undergraduate honors thesis, CSU, completed 2002.
Laura Straup, CSU, REU, 2001.

TEACHING EXPERIENCE

PSU	HNDRE 574	Integrated HDNRE Perspectives (3 credits)
PSU	SOILS/CE/GEOSC 536	Topics in Biogeochemistry (2 credits)
PSU	ECLGY 590	Colloquium in Ecology (1 credit)
PSU	HDNRE 590	Human Dimensions of Natural Resource and the Env. (1 credit)
PSU	ERM 413W	Case Studies in Ecosystem Management (3 credits)
PSU	FOR 499	Global Change Ecology Research in Spain (3 credits)
PSU	SOILS590	Colloquium in Crop and Soil Sciences (1 credit)
PSU	SOILS071 GN IL	Environmental Sustainability (3 credits)
PSU	ECLGY515	Classical Ecology (2 credits: team taught)
PSU	ECLGY510	Advances in Ecology (3 credits; team taught)
PSU	SOILS571	Ecosystem Nutrient Cycles (3 credits)
PSU	SOILS502	Soil Properties and Functions (3 credits; team taught)
ASU	BIO491/594 GLG 490/598	Soil Ecology (4 credits with lab)
ASU	BIO491	Stable Isotopes in Ecological Research (1 credit)
ASU	BIO491/594	Global Change Biology (2 credits)
ASU	BIO594 - IGERT workshop	Social/Environmental Aspects of Irrigation Systems (3 credits)
ASU	BIO314/414	Biology and Society Research Colloquium (3 credits)