September 4, 2026

JASON PHILIP KAYE
Distinguished Professor of Soil Biogeochemistry
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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

2026 Alumni Society J. Jeffrey and Ann Marie Fox Graduate School Chair Leadership Award
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)

Hosler, S.C., B.A. Bradley, F.E. Buderman, J.P. Kaye, and C.J. Lowry. 2026. Species interactions promote stability and modulate cover crop responses to environment in a long-term experiment. Ecological Applications, accepted.

Yates, C., J.P. Kaye, and T.H. Bell. 2026. Mycorrhizal association predicts soil N cycling rate, gene content, and inorganic N pools across varied forest types. Ecosphere, accepted.

September 4, 2026

Isbell, S., K. Reardon, C. Yates, T.H. Bell, J.P. Kaye. 2026. Cover crop influence over soil microbiomes varies by plant functional group and is nutrient-dependent. Phytobiomes Journal, accepted

Kopp, M.W., K. Davis, J. Duncan, and J.P. Kaye. 2026. Diel Patterns of Soil CO_2 Efflux Vary Among and Within Forests. Soil Science Society of America Journal, 90, e70241. https://doi.org/10.1002/saj2.70241

Paranjape, S.M., K. Hauri, N. McCarteny, E. Wagner, A. Richter, *B. Bradley*, J. Kaye, G. Jander, J. Ali. 2026. Persistent Field Soil Legacies of Cover Crops Influence Maize Quality and Resistance to Herbivory. Agriculture Ecosystems and Environment. 407, 110437. https://doi.org/10.1016/j.agee.2026.110437

Marali, K., Cibin, R., and Kaye, J. 2026. Cover crop implementation strategies differentially impact in-field and downstream ecosystem service provisioning: A regional case study. Journal of Environmental Quality, 55, e70199. https://doi.org/10.1002/jeq2.70199

Mohammadpour, P., Grady, C., Wainger, L., Kaye, J., Abler, D., and Cibin, R. 2026. Systems approach to nitrogen modeling in the Chesapeake Bay: Advancing production chain analysis under future changes. Journal of Environmental Quality, 55, e70142. https://doi.org/10.1002/jeq2.70142

Baraibar, B., *B.A. Bradley,* M.C. Hunter, C.M. White, D.M. Finney, J.P. Kaye, M.E. Schipanski, D.A. Mortensen. 2026 Legacy effects of cover crops on weed biomass and yield of the subsequent corn crop. European Journal of Agronomy. 173: 127898

Richards, S.C., W.L. King, L.Y. Cao, B.A. Bradley, E.K. Rice, C.J. Lowry, R. Roman, J.P. Kaye, Couradeau, E.M. and T.H. Bell. 2026. Microbial colonizers in an agroecosystem under diverse cover crop treatments. Phytobiomes Journal, 10 (1): 83-97. https://doi.org/10.1094/PBIOMES-07-25-0054-R

Butkus, C., J. Weitzman, A. Mohammadzadeh, P. Dunn, J.P. Kaye, L. Gilbertson, S. Little, and E. Elliott. 2025. A lecithin liposome stimulates soil microbial respiration and nitrate immobilization ACS Agricultural Science & Technology 5 (12): 2509–2518. https://doi.org/10.1021/acsagscitech.5c00587

Ordóñez, R.A., C.M. White, J.T. Spargo, J.P. Kaye, M. Ruark, J. Iqbal, C.A. Shapiro. W.E. Thomason, N.M. Fiorellino, L.A. Thorne, A. Shober, J.H. Grove. S.M. Hirsh, R.R. Weil, M.J. Castellano, S.V. Archontoulis, J.J. Hatfield, C.D. Lee, D.J. Quinn, Z.P. Sanders, Z. Rivera-Ocasio, S. Tierney, K.E. Arrington, A.M. Lefever, M. Tejera-Nieves, G.G. Danalatos, L.A. Puntel, H. Poffenbarger, S. Leuthold, J. Miller, G.S. Toor, T.J. Vyn. 2025 Delta yield predicts nitrogen fertilizer requirements for corn in US production systems. Agronomy Journal. 2025;117:e70150. https://doi.org/10.1002/agj2.70150

Hosler, S. C., Murrell, E. G., Arrington, K. E., Baraibar, B., Barbercheck, M. E., Bradley, B. A., Burgess, M., Finney, D. M., Hunter, M. C., LaChance, J. C., Mortensen, D. A., White, C. M., Lowry, C. J., & Kaye, J. P. 2025. Managing cover crop mixtures over a decade via species replacement and seeding rate adjustment. Agricultural & Environmental Letters, 10, e70029. https://doi.org/10.1002/ael2.70029

Marali, K., Chiles, R. M., Kaye, J. P., Kirchhoff, C., Wainger, L., & Cibin, R. 2025. A systematic review of ecosystem services modeling for environmental health assessment. Ecological Indicators 172, 113245. DOI: https://doi.org/10.1016/j.ecolind.2025.113245

Ono-Raphel, J. G., Custer, G. F., *Arrington, K*., Morrison, B., Kaye, J. P., Rosskopf, E., Dini-Andreote, F., & Di Gioia, F. 2025. Effects of carbon sources on soil bacterial community dynamics during anaerobic soil disinfestation in an organic tomato production system. Agriculture, Ecosystems & Environment 381, 109448. https://doi.org/10.1016/j.agee.2024.109448.

Lisenbee, W., A. Saha, P. Mohammadpour, R. Cibin, J. Kaye, C. Grady, and I. Chaubey. 2024. Water quality impacts of recycling nutrients using organic fertilizers in circular agricultural scenarios. Agricultural Systems 219: 104041. https://doi.org/10.1016/j.agsy.202

Gomez, M., C. Grady, L. Wainger, R. Cibin, D. Abler, D. Bosch, and J. Kaye 2024. Impacts of future scenarios on the nitrogen loss from agricultural supply chains in the Chesapeake Bay. Environmental Research Letters 19: 084039. DOI: 10.1088/1748-9326/ad5d0b.

Arrington, K. E., Ordóñez, R. A., *Rivera-Ocasio, Z., Luthard, M*., Tierney, S., Spargo, J., Finney, D., Kaye, J. P., & White, C.M. 2024. Improving a nitrogen mineralization model for predicting unfertilized corn yield. Soil Science Society of America Journal, 88: 905-920.

Primka, E.J. IV, Adams, T.S., Buck, A., Forsythe, B., Harper, J., *Kopp, M*., Kaye, J., and D.M. Eissenstat. 2023. Temporal patterns of fine root dynamics have little influence on seasonal soil CO2 efflux in a mixed, mesic forest. *Ecosphere, 14*(10), e4670.

Hodges, C., Araujo, P. I., Hess, L. J., Vivanco, L., Kaye, J. P., and A.T. Austin. 2023. Metal cation concentrations improve understanding of controls on soil organic carbon across a precipitation by vegetation gradient in the Patagonian Andes. *Geoderma, 440*, 116718.

Smithwick, E. A. H., Baka, J., Bird, D., Blaszscak-Boxe, C., Cole, C. A., Fuentes, J. D., Gergel, S. E., Glenna, L. L., Grady, C., Hunt, C. A., Iulo, L. D., Kaye, J. P., and K. Keller. 2023. Regenerative landscape design: an integrative framework to enhance sustainability planning. *Ecology and Society, 28*(4):5. https://doi.org/10.5751/ES-14483-280405

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

Kopp, M., Kaye, J., *Smeglin, Y.H*., Adams, T., Primka, E.J., *Bradley, B.*, Shi, Y. and Eissenstat, D. 2023. Topography Mediates the Response of Soil CO2 Efflux to Precipitation Over Days, Seasons, and Years. Ecosystems 26 (4), 687-705. 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 CO_2. 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, R.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, and 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. Bunchek, 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 CO_2 and O_2 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. Goddéris, 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

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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

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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

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Kaye, J.P., S.C. Resh, M.W. Kaye, and R. Chimner. 2000. Nutrient and carbon dynamics in a replacement series of *Eucalyptus* and *Albizia* trees. Ecology 81:3267-3273.

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PEER REVIEWED BOOK CHAPTERS

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Burke, I.C., Mosier, A., P.B. Hook, D.G. Milchunas, J.E. Barrett, M.A. Vinton, R.L. McCulley, J.P. Kaye, R.A. Gill, H.E. Epstein, R.H. Kelly, W.J. Parton, C.M. Yonker, P. Lowe, and W. Lauenroth. 2008. Soil organic matter and nutrient dynamics of shortgrass steppe ecosystems. *In:* W. Lauenroth and I. Burke (eds.), *Ecology of the Shortgrass Steppe: A Long-Term Perspective.* Oxford University Press

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

10/1/2024-9/30/2026. USDA McIntire-Stennis. Sole PI. Sustaining measurements and models that link forest growth, erosion and water flow at the Shale Hills Critical Zone Observatory. $196,263.

9/1/23-8/31/27. NSF Ecosystems. Lead-PI. Testing a framework of soil-stream interfaces that expand and contract to affect biogeochemistry in headwater catchments. With K. Davis, J. Duncan, B. Forsythe, and Y. Shi. $1,000,000.

9/1/23-8/31/27. USDA ORG. Lead-PI. Comparing Soil Health and Weed Suppression within Organic Annual and Perennial Rotations. With C. Lowry, G. Wang, and K. Arrington. $1,000,000

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

9/2020-10/2024. USDA OREI. Lead PI. Advancing nitrogen decision support for organic agriculture. With C. White and D. Finney. $500,000.

9/2019-8/2023. USDA ORG. Co-PI. Smart tillage to reduce N_2O emissions from organic agriculture. With A. Kemanian. $500,000.

9/2019-8/2023. 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

9/2018-8/2024. 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.

7/2018-10/2023. 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.

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).

8/2024-7/2027. NSF GRFP. Advisor of Fellow. Vertical partitioning of soil respiration with deep soil warming in a tropical forest. With Rachel Cruz-Perez. $159,000.

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

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 N_2O 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

Cruz-Pérez, R., Barreto-Vélez, T., Ortiz-Iglesias, D.A., Rubio-Lebrón, L.C., McFarlane, K., Cavaleri, M., Reed, S., Wood, T.E., and Kaye, J. (2026) Effect of experimental warming on sources of soil respiration in a tropical forest. EGU General Assembly, Vienna, Austria, https://doi.org/10.5194/egusphere-egu26-23021.

Bock, H., Kaye, J.P., Schlossberg, M.J., Fleishman, S.M. (2026) Mowing-induced shifts in grass root traits reshape soil food web structure and function". Invited talk at the 4th Global Soil Biodiversity Conference, Victoria, BC, Canada on April 12, 2026.

Bock, H., Kaye, J.P., Schlossberg, M.J., Fleishman, S.M. (2026) A new mowing paradigm alters urban soil food web structure and function". Soil Ecology Society of America Biennial Meeting, Pemberton, NJ on May 18, 2026.

Suseela, V., Singh, P., Kaye, J.P., and Bradley, B., 2025. How do different plant functional types affect soil organic carbon sequestration in particulate and mineral-associated fractions? Insights from a long-term experiment. AGU Fall Meeting, New Orleans.

Gray, J., Harris, J., Kaye, J., & Couradeau, E. (2025). Using BONCAT-FACS to probe the active microbial community during N2O production. Ecological Society of America Conference, Baltimore, Maryland.

Gray, J., Harris, J., Kaye, J., & Couradeau, E., (2025). "Using BONCAT-FACS to probe the active microbial community during N2O production," Microsoil conference, Saint-Loup-Lamaire, France.

Singh, P., Kaye, J., Bradley, B., and V. Suseela. (2025) Revealing the molecular nature of soil organic carbon under different plant functional types. CANVAS, Salt Lake City.

Freiman, E., Duncan, J. M., & Kaye, J. P. (2025). Hydrology and Nutrient Patterns of a Non-Perennial Stream, Shale Hills, PA, American Geophysical Union Annual Meeting, New Orleans, Louisiana, USA.

Hosler, S., Lowry, C., & Kaye, J. P. (2025). 12 Years Investigating Cover Crop Diversity: Do Mixtures Improve Weed Suppression? Northeastern Weed Science Society Annual Meeting, Weed Science Society of America, Annapolis, Maryland, USA,

Hosler, S., Lowry, C., & Kaye, J. P. (2025). Multi-Species Mixtures Mediate Environmental Effects on Cover Crop Productivity," Ecological Society of America Annual Meeting, Ecological Society of America, Baltimore, Maryland, USA.

Rice, E., Burghardt, L., Luthard, M., Lowry, C., & Kaye, J. P. (2025). Species biomass allocation in cover crop mixtures and its impact on ecosystem services. Ecological Society of America Annual Meeting, Baltimore, Maryland, USA.

Hofmann, M., Lowry, C., & Kaye, J. P. (2025). The impact of initial species density on above and belowground productivity and relative species abundance in diverse cover crop communities. Ecological Society of America Annual Meeting, Baltimore, Maryland, USA,

Kopp, M. and J.P. Kaye (2025) Untangling mechanisms of variation in diel soil CO_2 efflux from forests. Ecological Society of America Annual Meeting, Baltimore, MD.

Rivera-Ocasio, Z., White, C., Kaye, J. P., Patel, H., & Janneth-Fernandez, L. (2024). "Estimating Microbial Carbon Use Efficiency As the Pivot Point for a Nitrogen Decision Support Tool," Soil Science Society of America Summer Conference, San Juan, Puerto Rico.

Di Gioia, F., R. B., J. O.-R., Dini Andreote, F., & Kaye, J. P. (2024). "Integrating Anaerobic Soil Disinfestation in Organic Vegetable Production Systems," American Society of Horticultural Science, Alexandria, VA.

Luthard, M., Alonso-Ayuso, M., Mejia, C., Finney, D., Arrington, K., Bradley, B., White, C., & Kaye, J. P. (2024). "Leveraging Ten Years of Cover Crop Management to Evaluate the Ability of Diverse Mixtures to Reduce Nitrogen Leaching Losses Compared to Monocultures," Soil Science Society of America Annual Meeting, San Antonio, Texas.

Butkus, C., Weitzman, J., Kaye, J. P., Dunn, P., Mohammadzadeh, A., Little, S., Gilbertson, L., & Elliott, E. (2024). "Liposome Carriers for Nitrogen Alter Soil Carbon and Nitrogen Cycles," American Geophysical Union Annual Meeting, Washington, DC.

Arrington, K., F. Di Gioia, J. Ono-Raphel, R. Barbosa, J. Kaye, F. Dini-Andreote, and E. Rosskopf. 2023. Effects of Alternative Cover Crops and Anaerobic Soil Disinfestation on Plant Growth, Yield, and Quality Performance of Organic Fresh-Market Tomato. ASHS Annual Conference, Orlando

Ono-Raphel, J., F. Dini-Andreote, G. Gordon, K. Arrington, R. Barbosa, J. Kaye, E. Rosskopf, and F. Di Gioia. 2023 Effects of alternative cover crops and anaerobic soil disinfestation on the Soil Microbiome in an Organic Tomato Crop System. ASHS Annual Conference, Orlando

Andrews, E., A. Ortiz, V. Molina, J. Kaye, A. Darrouzet-Nardi, and L. Jin. 2023. Soil CO_2 dynamics in flood irrigated arid agricultural fields: temporal variability of abiotic and biotic CO_2 production and transport. Goldschmidt 2023 Conference, Lyon, France.

Kopp, M. W., and Kaye, J. P. 2022. Untangling Drivers of High Nighttime Soil CO_2 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.

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)

White, C., Antonio-Ordonez, R., Sanders, Z., Ocasio, Z. R., Spargo, J., Tierney, S., Arrington, K., Kaye, J. P. (2021). "Towards a Semi-Mechanistic Fertilizer Recommendation System That Accounts for Cover Crop Nitrogen Mineralization Dynamics," Soil Science Society of America, Salt Lake City, UT, USA. (Oral)

Isbell, S., Bell, T., Kaye, J. P. (2021). "Using interseeded cover crops to enhance nitrogen ecosystem services driven by plant-soil microbial relationships in agroecosystems," Ecological Society of America, Virtual. (Poster)

Antonio-Ordonez, R., White, C., Spargo, J., Kaye, J. P., Sanders, Z., Weil, R., Thomason, W., Ruark, M., Iqbal, J., Fiorellino, N., Shober, A., Castellano, M., Archontoulis, S., Grove, J., Lee, C., Danalatos, G., Puntel, L., Poffenbarger, H., Wells, H. (2021). "Yield Gap As a Key Metric to Determining N Fertilizer Rates in Maize Crop," Soil Science Society of America, Salt Lake City, UT, USA. (Poster)

Hodges, C., A. T. Austin, L. Vivanco, J. Kaye. 2020. The Effects of Pine Afforestation and Climate on Soil Metals and Carbon Accumulation across a Patagonian Rainfall Gradient. ASA CSSA & SSSA Annual Meeting. Virtual. November 2020. (Poster)

Hodges, C., J. Regan, J. Kaye, B. Forsythe, D. Oakley, A. Nyblade, S. L. Brantley. Quantifying in Situ Metal Redox in Soils of the Susquehanna Shale Hills Critical Zone Observatory Using Fixed Potential Electrodes. ASA CSSA & SSSA Annual Meeting. Virtual. November 2020. (Oral)

Hodges, C., J. Regan, J. Kaye, B. Forsythe, D. Oakley, A. Nyblade, S. L. Brantley. 2020. Quantifying *in situ* metal redox in response to fluctuating soil moisture using electrical resistivity and fixed potential electrodes. NSF/UKRI Signals in the Soil. Virtual. September 2020. (Poster)

Brantley, S. L., A. Nyblade, J. Regan, B. Forsythe, C. Hodges, J. Kaye, D. Oakley. 2020. EAGER SitS: Emergent properties of soil development at the Susquehanna Shale Hills Critical Zone Observatory. NSF/UKRI Signals in the Soil. Virtual. September 2020. (Poster)

Regan, J., C. Hodges, B. Forsythe, J. Kaye, and S. Brantley, 2020. Electrochemical monitoring of shallow soils in the Susquehanna Shale Hills Critical Zone Observatory for real-time measurement of metal redox reaction dynamics. American Geophysical Union.

Primka, E., T. Adams, J. Kaye, and D. Eissenstat. 2020. Tree root dynamics across complex topography within a mixed, mesic forest catchment. Ecological Society of America Annual Meeting, Virtual.

Kyker-Snowman, Emily, K. Georgiou, M. Hartman, W. Wieder, D. Pierson, A. Berhe, J. Kaye, S. Grandy. 2020. Carbon and nitrogen couplings in a microbially-explicit soil model and the global-scale Soil Data Harmonization (SoDaH) database. Ecological Society of America Annual Meeting, Virtual.

Davidson-Lowe, E, E Murrell, S Ray, J Kaye 2019. Cover crop legacies alter AMF colonization and resistance to chewing herbivores in maize. Entomology 2019, St. Louis, MO.

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 CO_2 efflux across a mesic temperate forest catchment. American Geophysical Union Fall Meeting, San Francisco.

Hodges, CA, JM Regan, B Forsythe, S Brantley and JP Kaye. 2019. Using apparent respiratory quotient and fixed potential electrodes to quantify iron redox in upland soils of the Susquehanna Shale Hills Critical Zone Observatory. American Geophysical Union Fall Meeting, San Francisco.

Forsythe B, J Harper, S Brantley, JM Regan, *CA Hodges*, JP Kaye, and A Nyblade. 2019. Critical Zone Measurements: Development of Novel Experimental Deployments to Further Our Understanding of Hydrological Processes American Geophysical Union Fall Meeting, San Francisco.

Oakley, D, A Nyblade, S Brantley, NJ Accardo, B Forsythe, CA Hodges, JM Regan and *JP Kaye*. 2019. Seismic Ambient Noise and Electrical Resistivity Imaging of Subsurface Water Changes in the Susquehanna Shale Hills CZO, Pennsylvania. American Geophysical Union Fall Meeting, San Francisco.

Schipanski, M., S. Fonte, C. Kelly, J. Brummer, D. Finney, C. White, S. Rosenzweig, and J. Kaye. 2019. Integrating plant functional diversity into cropping systems to support multifunctionality. Soil Science Society of America Annual Meeting, San Diego.

Hodges, C., H. Kim, S. Brantley, and J. Kaye. 2019. Soil gas concentrations at the Susquehanna Shale Hills CZO indicate different physical and chemical drivers of gas production and consumption in shale and sandstone watersheds. Soil Science Society of America Annual Meeting, San Diego.

White, C.M., A. Colin, and J.P. Kaye. 2018. New tools for nitrogen management in organic cropping systems. ASA, CSSA, and CSA International Annual Meeting, Baltimore.

Isbell, S. and J. Kaye. 2018. Nitrogen services provided by interseeded cover crops in organic corn systems. Agronomy Society of America Annual Meeting, Baltimore.

Mejia, C. and J. Kaye. 2018. Rain simulations to test the erosion protection potential of different cover crops. American Geophysical Union Fall Meeting, Washington, DC.

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.

Eissenstat, D. Orr, A. Szink, I, K. Naithani, J. Kaye, and T. Adams. 2018. Biomass Partitioning to Absorptive Roots in the Context of Multiple Resource Limitation American Geophysical Union Fall Meeting, Washington, DC.

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.

Saha, D., A. Bhowmik, A. Kemanian, J.P. Kaye, and M.A. Bruns. 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.

Hoagland, B., T. Russo, C. Schmidt, R. Adams, and J.P. Kaye. 2017. Impacts of floodplain restoration on nitrogen transformation pathways in the Cosumnes River, California. American Geophysical Union, Fall Meeting, San Francisco, CA.

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.

Morris, A., J.P. Kaye, and *S. Isbell*. 2017. Improving nitrogen retention of agroecosystems using interseeded cover crops. Ecological Society of America Annual Meeting, Portland, OR.

White, C., D. Finney, M. Hunter, B. Baraibar Padro*, E. Murrell*, J. Hinds, M. Barbercheck, D. Mortensen, and J. Kaye. 2016. Multifunctionality of cover crop mixtures in an organic grain and forage cropping system. *In* Can Cover Crop Mixtures Maximize Agro-Ecosystem Services? Annual Meeting, American Society of Agronomy. Phoenix, AZ. 9 November, 2016.

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 N_2O 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.

Finney, D.M. and J.P. Kaye. 2015. Functional diversity promotes multifunctional cover cropping systems. Ecological Society of America Annual Meeting. Baltimore, MD.

Brantley, S., H. Lin, P. Sullivan, X. Gu, *E. Hasenmueller*, J. Kaye. 2014. Exploring how rock turns to regolith at the Susquehanna Shale Hills Critical Zone Observatory, Central Pennsylvania. GSA Northeastern Section, Lehigh, PA.

Davis, K., C. Duffy, D. Eissenstat, Y. Shi, D. Baldwin, S. Brantley, *E. Hasenmueller*, Y. He, J. Kaye, M. Kaye, H. Lin, K. Nauthani, A. Neal, X. Yu, and F. Zhang. 2014. Model-data synthesis of the carbon and water cycles at very high resolution in complex topography. Ameriflux Meeting, Patomac, Maryland.

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 N_2O, O_2, and CO_2 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 N_2O flux from soils? Soil Science Society of America Meeting, Tampa, Florida

Finney, D. and J. Kaye. 2012. Nitrate dynamics in organic cropping systems. Soil Science Society of America Meeting, Cincinnati, Ohio

Jin, L., N. Ogrinc, T. Yesavage, J. Kaye, and S. Brantley. 2012. Drawdown of atmospheric CO_2 by gray shale weathering: insights from carbon, sulphur, and oxygen isotope systematics in the Susquehanna Shale Hills Critical Zone Observatory. AGU Annual Fall Conference Proceedings, San Francisco.

Kaye J., *D. Lewis*, and M.Castellano. 2012. Rapid immobilization of inorganic nitrogen in stable soil organic matter of forest ecosystems. Ecosummit, Columbus, Ohio

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

Zhang, Y., Y. Qian, D. Bremer, J. Kaye. 2012. Simulation of N_2O emissions from two cool season turfgrass lawns using the Daycent model. Soil Science Society of America Meeting, Cincinnati, Ohio

Adviento-Borbe, A.A., J. Kaye, M.A. Bruns, *M.D. McDaniel*, M.T. McCoy, and W.S. Harkcom. 2011. Crop rotation and fertilizer type affect ammonia and greenhouse gas emissions in long-term maize-based agroecosystems. Soil Science Society of America Meetings, San Antonio.

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.

Hall S.J., R.A. Sponseller, N.B. Grimm, D. Huber, C. Clark, S.L. Collins, J.P. Kaye, and J. Allen. 2009. Ecoystem response to the urban atmosphere in the Sonoran Desert. Ecological Society of America Meeting, Albuquerque, August.

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.

McDaniel, M.D., J.P. Kaye, M.W. Kaye, and B. Kimball. 2009. Measuring the interactive effects of warming and wetting on soil C and N losses and microbial communities following forest harvesting. Soil Science Society of America meetings, Pittsburgh

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.

Findeis, J.L., J. Bishop, K. Brasier, B. Demeke, J. Kaye, D. Miller, D. Mortensen, R. Stedman, R. Salcedo Du Bois, and S. Li. 2008. Human Population Dispersion and the Structure of Agriculture in the Susquehanna Rural-Exurban-Urban Transition Zone (T-Zone). Rural Sociological Society, Manchester, NH. July.

Castellano, M.J. and J.P. Kaye. 2008. Variation in soil solution nitrogen is a function of clay content. 1st International Hydropedology 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 N_2O 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.

Starovoytov, A., Gallagher, R., Kaye, J.P., Richard, T., Cook, J., and McCoy, W. 2007. Management alternatives to enhance sequestration of legume-based nitrogen. Soil Science Society of America meetings, New Orleans

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.

Lewis, D., J. Kaye, C. Redman, and A. Kinzig. 2006. Importance of historical and present-day land use for the lability of soil C and N. World Congress of Soil Science, Philadelphia, PA.

Lewis, D., J. Kaye, C. Redman, and A. Kinzig. 2006. Legacies of agriculture in carbon and nutrient pools of arid urban soils. World Congress of Soil Science, Philadelphia, PA.

Gries, C., C. Bang, J. Briggs, M. Di'Iorio, L. Dugan, R. Erickson, S. Earl, S. Feath, M. Feldner, N.B. Grimm, D. Hope, J.P. Kaye, A. Kinzig, C. Kochert, A. Majumdar, C. Redman, E. Shock, Q. Stewart, L. Taylor-Taft, J. Walker, J. Stutz, M. Tseng, S. Whitcomb, X. Zhuo. Survey200: CAP LTER's approach to extensive field monitoring. Central Arizona Phoenix LTER All Scientists Meeting, Tempe, AZ.

Hall, S. N. Grimm, J. Kaye, and J. Allen 2006. Ecosystem response to the urban atmosphere in the Sonoran Desert. Ecological Society of America Meetings, Memphis, TN.

Lewis, D. and J. Kaye. 2006. Response of soil carbon pools and fractions to a century of land use change. Ecological Society of America Meetings, Memphis, TN

Montes-Helu, M.C., S. Dore, B. Sullivan, S. Hart, J. Kaye, W. Winslow, G. Koch, B. Hungate, and T. Kolb. 2006. Carbon Fluxes in Disturbed Southwestern Ponderosa Pine Forests. Ameriflux Annual Meeting, Boulder, CO.

Sponseller, R., S. Hall, N. Grimm, J. Kaye, J. Allen, D. Huber, J. Riddell, Q. Stewart, C. Kochert, and A. Ghimire. 2006. Effects of the urban atmosphere on ecosystem processes in the Sonoran desert: Initial patterns. LTER All Scientists Meeting Estes Park, CO.

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.

Horn, K, Johns, T., and J.P. Kaye. 2005. Nitrogen dynamics in ponderosa pine stands infested with bark beetles. Ecological Society of America, Montreal, Quebec.

Kaye, J.P., A. Majumdar, C. Gries, D. Hope, W. Zhu, N. Grimm, D. Jenerette, and L. Baker. 2005. The spatial distribution of soil carbon and nitrogen in a regional matrix of urban, agricultural, and desert ecosystems. Ecological Society of America, Montreal, Quebec.

Hungate, B. S. Hart, J.P. Kaye, G. Koch, and T. Kolb. 2005. Ecological restoration of western forests: a win-win for fire and carbon management? AAAS Rocky Mountain Region, Tucson, AZ.

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.

Hope, D. C. Gries, P. Warren, M. Katti, G. Stuart, W. Zhu, J. Oleson, and J.P. Kaye. 2004. How do humans restructure the biodiversity of the Sonoran desert? Southwest Deserts Conference, Tucson, AZ.

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.

Thomas, J., S.C. Hart, J.P. Kaye, D.R. Guido, and S.I. Boyle 2003. Long-term effects of restoration on soil respiration and net N mineralization and nitrification in a ponderosa pine-bunchgrass ecosystem. Southwest Fire Initiative, Flagstaff, AZ.

McCulley, R. and J.P. Kaye. 2003. Soil microbial communities in urban ecosystems compared to nearby native grasslands and agriculture. CAP-LTER Research Symposium. Tempe, AZ.

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.

Guerschman J.P., J.P. Kaye and I.C. Burke 2002. Land cover classification in an urban-rural gradient with Landsat TM data using a combination of hard and soft classifier methods. Int. Symposium on Remote Sensing of the Environment, Buenos Aires, Argentina.

Kaye, J.P. and D. Binkley. 2001. Non-labile soil nitrogen accumulation during primary floodplain succession. Soil Science Society of America, Charlotte, N.C.

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 CO_2 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. 2025. Using cover crop mixtures to manage tradeoffs between nitrogen pollution and soil fertility for corn. Invited oral presentation. Soils, Plants and Consumers Seminar Series, Penn State.

Kaye, J.P., C. Hodges, and M. Kopp. 2023. Controls on soil CO_2 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.

White, C.M., D.M. Finney, E. Murrell, B. Baraibar-Padro, J. Hinds, M.C. Hunter, M. Barbercheck, D. A. Mortensen, JP. 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. Romanya, 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, Deparment 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.

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

September 4, 2026

NSF DEB Ecosystem Studies

EDITORIAL BOARD
Oecologia, 2005-2019
Ecological Applications, 2019- present
Ecosphere, 2020-present (Associate Editor in Chief, 2024-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) 13 MS, 12 PhD, 9 Postdoc
Elizabeth Hughes, M.S., Ecology, began May 25
Sheryl Hosler, Postdoc., began spring 24
Jonah Gray, Ph.D. Ecology, began fall 23
Rachel Cruz-Perez, Ph.D. Ecology, began August 2022
Michael Gomez-Sanchez, Postdoc, August 2022-October 2023
Whitney Lisenbee, Postdoc, August 2020-January 2022
Madeline Luthard, Ph.D. Ecology, completed summer 2026
Marissa Kopp, Ph.D. Ecology, completed summer 2024
Kathleen Arrington, Postdoc, August 2019-2024
Yuting He, Postdoc, 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, Posdoc, 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
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 2 MS, 10 PHD
Valerie Smykolov, Ph.D., Environmental Engineering and Biogeochemistry (Primary advisor, LiLi)
Luisa Robles, PhD Soil Science and Biogeochemistry, began fall 23 (Primary advisor, Estelle Couradeau)
Patrick Hoover, PhD Environmental Engineering, fall 22 (Primary advisor, Jay Regan)
Fiona Liu, PhD Environmental Engineering and Biogeochemistry, began fall 22 (Primary advisor, LiLi)
Maya Hofmann, PhD Ecology, began fall 2024 (Primary advisor, Carolyn Lowry)
Elijah Freiman, MS Forest Resources, completed summer 2026 (Primary advisor, Jon Duncan)
Zoelie Rivera-Ocasio, Ph.D., Soil Science and Biogeochemistry, in progress (Primary advisor Charlie White)
Ryan Trexler, Ph.D., Ecology and Biogeochemistry, completed 2026 (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 (or current position if known)
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 Gomez Sanchez	Postdoc	Hydrologist, First Street Foundation
Dr. Kathleen Arrington	Postdoc	Systems Analyst, Nutrient Management, PSU
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	Associate 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, Stanford University
Dr. Caitlin Hodges	Ph.D. Student	Assistant Professor, University of Oklahoma
Dr. Sarah Isbell	Ph.D. Student	Research Director, PASA Sustainable Agriculture
Dr. Marissa Kopp	Ph.D. Student	Forestry Technical Officer, Am. Carb. Reg.
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
Dr. Beth Hoagland	Ph.D. Student (co-advised)	NSF Postdoctoral Fellow, Colorado School of Mines

September 4, 2026

AWARDS RECEIVED BY GRADUATE STUDENTS WHOSE RESEARCH I ADVISE

Elizabeth Hughes, Bunton-Waller Fellowship 2025-2026
Elizabeth Hughes, Watershed Stewardship Fellowship, 2025-2026
Elizabeth Hughes, Graham Fellowship, 2025-2026
Elijah Freeman, Watershed Stewardship Fellowship, 2024-2025
Maya Hofmann, Watershed Stewardship Fellowship, 2024-2025
Jonah Gray, NSF GRFP, Honorable Mention, 2025
Jonah Gray, University Graduate Fellowship, 2023-2024
Jonah Gray, McKenna Fellowship, 2023-2024
Rachel Cruz-Perez, NSF GRFP, 2024-2027
Rachel Cruz-Perez, Scarlett Fellowship, 2022-2023
Rachel Cruz-Perez, McKenna Fellowship, 2022-2023
Rachel Cruz-Perez, College of Ag Sciences Research Grant, 2024-2025
Madeine Luthard, Horton Award, 2024
Madeline Luthard, 1st place oral presentation, SSSA Annual Meetings, Soil and Environmental Quality Section, 2024
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, Paul Hand Distinguished Teaching Award, 2024
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.
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)
Allie Rice, M.S., Applied and Environmental Plant Sciences, in progress
Alexander Creighton, M.S., Meteorology, in progress
Kelsey Mercurio, Ph.D., Ecology, in progress
Rainey Rainford, Ph.D., Ecology, in progress
Andrew Lefever, Ph.D., Applied and Environmental Plant Sciences, in progress
Marali Karla, PhD, Civil Engineering, completed 2025
Joe Ono-Raphael, PhD, Applied and Environmental Plant Sciences, in progress
Emma Rice, PhD, Ecology, completed 2025
Jennifer Harris, PhD, Ecology, completed 2025
Sujay Paranjape, Ph.D. Entomology, completed 2025
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
Ismaiel Szink, MS, Ecology, DNF

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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
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)
Keean Mansour, Fall 2025-ongoing
Timmy Stehman, summer 2025- ongoing
Ben Schlosser, Fall 2025
Katie Kovalchick, summer 2025
Sage Schmouder, 2023-2024
Maria Giarrusso, Honors Thesis, 2023-2025
Ryan Gaydos, FURP, 2023-2025
Jesen Hosch, summer 2023
Sarah Brown, 2022-2023
Amanda Rill, 2022-2025
Heer Patel, summer 2022

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Lindsay Bell, 2021-2022
Colen Sorber, Summer 2021
Ezra Raupach-Learn, Summer 2021
MaryBeth Gavin, 2021-2023
Megan Kownurko, 2021-2023
Dana Sanchez, spring 2021-fall 2021
Nicolai Sartori, Summer 2020
Ashley Moll, Summer 2019
Willow Blew, spring 2019-spring 2021
Trisha Poorbaugh, WISER, 2019
Christina Boutselis, Summer 2018
Madison Schaefer, Summer 2018
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
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	SOILS 412W	Soil Ecology (3 credits)
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)

PROFESSIONAL SERVICE

University service
Seed grant review panel, PSIEE Seed grant competition, 2014, 2026
Major research instrumentation (internal) selection committee, 2014
Postdoc competition search committee, PSIEE, 2011-2012
Advisory Board, Carbon Earth Program, 2011-2014
Admissions Committee, Graduate Degree Program in Ecology, 2008-2016 (Chairman Fall 2009-2016)
Program Committee, Graduate Degree Program in Ecology, 2014-present
Strategic planning for biogeochemistry (lead author), PSIEE, 2010
Curriculum Committee, Graduate Degree Program in Ecology, 2008-2010
Major research instrumentation (NSF MRI) down-select panel, 2009
Committee to create a Human Dimensions of Natural Resources dual title graduate program, 2007- 2008
Executive Committee, Dual-Title Program in Biogeochemistry, 2007- 2021
Executive Committee, Earth and Environmental Sustainability Lab (EESL), 2018-2023.
Chair, Intercollege Graduate Degree Program in Ecology, 2018-present
Task Force for graduate academic integrity policy revision, 2019-2021
Task Force for developing a funding model for Inter College Graduate Degree Programs, 2019-2021.
Waste water management committee, OPP, 2019-present
Faculty Scholar Medal Selection Committee, Physical Sciences, 2024.

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College committees

SAFES Executive Committee, 2019-2020
Critical Issue Convener, SAFES, Co-Organizer. (2022 - Present).
Nutrient Management Faculty Search Committee 2017
Rockview Land Management Committee, 2012-2020
Advisory Committee, Environment and Natural Resources Institute, 2008-2018
Program Review Committee, Environmental Resource Management undergraduate major, 2006 –2007
Committee to consider an undergraduate water option within the Environmental Resource Management major, Environment and Natural Resources Institute. 2009-2010
Committee to evaluate a soil science option within the Environmental Resource Management major, Environment and Natural Resources Institute, 2008 – 2009
Faculty Advisory Committee to the Dean, 2009-2012
Spatial Economist Faculty Search Committee, 2008
Graduate student research proposal evaluations, 2007, 2009
Seed grant proposal review, 2008, 2009
Graduate Fellowship application review, 2018-present
Distinguished Professor Selection Committee, 2025

Department committees

Department Head Search Committee, 2019, 2024
Advisory Committee to the Department Head, Department of Ecosystem Science and Management, 2012 – 2014
Graduate Programs Committee, Department of Ecosystem Science and Management, 2013-2016, 2019-2020, 2021-2023
Web Committee, Department of Ecosystem Science and Management, 2012- 2018
Instrument Services Lab Committee, Department of Ecosystem Science and Management, 2005 - 2012
Bioenergy Faculty Search Committee, 2008-2009
Wildlife Biology Faculty Search, 2013
Advisory Committee, Department of Crop and Soil Sciences, 2006 – 2009
Faculty and Student Affairs Committee, Department of Crop and Soil Sciences, 2005 - 2006
Promotion and Tenure Committee 2015- 2018, 2024-present
Search committee member, Department Head Search 2019-2020
Chair, Soils Teaching Professor search, 2019.
Graduate Program Review Lead for Forest Resources, Wildlife and Fisheries Sciences, and Soil Science graduate programs, 2019-2020
Visioning and Planning Committee, 2021-2024
Forest Tree Ecophysiology Faculty Search, Chair, 2024-2025
Soil Science Qualifying Exam Committee (2014-2025, as needed)