Jeffrey Schuyler Dukes

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Professional Appointments

Belcher Chair for Environmental Sustainability, 2016-, Purdue University.
Director, Purdue Climate Change Research Center, 2014-. Purdue University.
Professor of Forestry and Natural Resources, 2014-. Purdue University.
Professor of Biological Sciences, 2014-. Purdue University.
Associate Director, Purdue Climate Change Research Center, 2013-4. Purdue University.
Associate Professor of Forestry and Natural Resources, 2010-2014. Purdue University.
Associate Professor of Biological Sciences, 2010-2014. Purdue University.
Assistant Professor of Forestry and Natural Resources, 2008-2010. Purdue University.
Assistant Professor of Biological Sciences, 2008-2010. Purdue University.
Adjunct Assistant Professor of Biology, 2008-present. University of Massachusetts Boston.
Assistant Professor of Biology, 2004-2008. University of Massachusetts Boston.
Postdoctoral Fellow, 2002-2004. Carnegie Institution of Washington, Department of Global Ecology. Advisor: Christopher B. Field.
Postdoctoral Fellow, 2000-2002. University of Utah, Department of Biology. Advisor: James R. Ehleringer.

Education

Stanford University, Ph.D., Biological Sciences, 2000. Advisor: Harold A. Mooney
Brown University, Bachelor of Arts, Biology, June 1992.

Academic Awards and Honors

Fellow, Ecological Society of America, 2018.
AAAS Public Engagement Fellow, Leshner Leadership Institute, American Association for the Advancement of Science, 2016-2017.
Academic Connection Award, Purdue University Learning Communities, 2014-2015, 2016-2017.
Real-World Experience Award, Purdue University Learning Communities, 2015-2016.
Richard L. Kohls Outstanding Undergraduate Teaching Award Nominee from Department of Forestry and Natural Resources, Purdue University, 2013-2014.
Outstanding New Learning Community Award, Purdue University, 2013-14.
Kavli Fellow, U.S. National Academy of Sciences, 2013, 2006.
University Faculty Scholar, Purdue University, 2012-2017.
Aldo Leopold Leadership Fellow, 2008.
CAREER Award, National Science Foundation, 2006.
Alexander Hollaender Distinguished Postdoctoral Fellowship, U.S. Department of Energy, 2000-2002.
Earth System Science Postgraduate Fellowship, NASA, 1996-1999.
Excellence in Teaching Award, Department of Biological Sciences, Stanford University, 1995.
National Merit Scholar, 1988.

Books

Ziska, L.H. and Dukes, J.S., eds. 2014. *Invasive Species and Global Climate Change*. CAB International, Wallingford, UK. 368 pp.
Ziska, L.H., Dukes, J.S. 2011. *Weed Biology and Climate Change*. Wiley-Blackwell, Ames, Iowa, USA. 235 pp.

Journal Articles and Book Chapters
(peer-reviewed; >100; H-index†=55; citations†=15,491)

* underlines denote advisees; †Google Scholar, 11/13/2019

Miniat, C.F., Fraterrigo, J.M., Brantley, S.T., Callaham, Jr., M.A., Cordell, S., Dukes, J.S., Giardina, C.P., Jose, S. and Lovett, G. 2019. Impacts of invasive species on forest and grassland ecosystem processes in the United States. In: Poland, T.M., Patel-Weynand, T., Finch, D., Miniat, C. F., and Lopez, V. (eds) Invasive Species in Forests and Grasslands of the United States: A Comprehensive Science Synthesis for the United States Forest Sector. Springer Verlag, in press.

Carr, A.N., Hooper, D.U. and Dukes, J.S. 2019. Long-term propagule pressure overwhelms initial community determination of invader success. **Ecosphere** 10(8).

Ettinger, A.K., Chuine, I., Cook, B.I., Dukes, J.S., Ellison, A.M., Johnston, M.R., Panetta, A.M., Rollinson, C.R., Vitasse, Y. and Wolkovich, E.M. 2019. How do climate change experiments alter plot-scale climate? **Ecology Letters** 22: 748-763.

Orians, C.M., Schweiger, R., Dukes, J.S., Scott, E.R. and Müller, C. 2019. Combined impacts of prolonged drought and warming on plant size and foliar chemistry. **Annals of Botany**.

Ploughe, L.W. and Dukes, J.S., 2019. Understory plant composition and nitrogen transformations resistant to changes in seasonal precipitation. **Ecosphere** 10: e02747.

Ploughe, L.W., Jacobs, E.M., Frank, G.S., Greenler, S.M., Smith, M.D. and Dukes, J.S., 2019. Community Response to Extreme Drought (CRED): A framework for drought-induced shifts in plant–plant interactions. **New Phytologist**, 222: 52-69.

Salazar, A., Lennon, J.T. and Dukes, J.S., 2019. Microbial dormancy improves predictability of soil respiration at the seasonal time scale. **Biogeochemistry** 144: 103-116.

Smith, N.G., Li, G. and Dukes, J.S., 2019. Short-term thermal acclimation of dark respiration is greater in non-photosynthetic than in photosynthetic tissues. **AoB PLANTS**.

Song, J., Wan, S., Piao, S., Knapp, A.K., Classen, A.T., Vicca, S., Ciais, P., Hovenden, M.J., Leuzinger, S., Beier, C., Kardol, P., et al. 2019. A meta-analysis of 1,119 manipulative experiments on terrestrial carbon-cycling responses to global change. **Nature Ecology & Evolution**, 3: 1309-1320.

Salazar, A., Sanchez, A., Villegas, J.C., Salazar, J.F., Ruiz Carrascal, D., Sitch, S., Restrepo, J.D., Poveda, G., Feeley, K.J., Mercado, L.M. and Arias, P.A., Sierra, C.A., Uribe, M.d.R., Rendón, A.M., Pérez Guillermo, J.C., Tortarolo, M. Mercado-Bettin, D., Posada, J.A., Zhuang, Q., Dukes, J.S. 2018. The ecology of peace: Preparing Colombia for new political and planetary climates. **Frontiers in Ecology and the Environment** 16: 525-531.

Koyama, A., Steinweg, J.M., Haddix, M.L., Dukes, J.S., Wallenstein, M.D. 2018. Soil bacterial community responses to altered precipitation and temperature regimes in an old field grassland are mediated by plants. **FEMS Microbiology Ecology** 94: fix156.

Lombardozzi, D.L., Smith, N.G., Cheng, S.J., Dukes, J.S., Sharkey, T.D., Rogers, A., Fisher, R., Bonan, G.B. 2018. Triose phosphate limitation in photosynthesis models reduces leaf photosynthesis and global terrestrial carbon storage. **Environmental Research Letters** 13: 074025.

Rodgers, V.L., Smith, N.G., Hoeppner, S.S., Dukes, J.S. 2018. Warming increases the sensitivity of seedling growth capacity to rainfall in six temperate deciduous tree species. **AoB Plants** 10: p.ply003.

Salazar, A., Sulman, B.N., Dukes, J.S. 2018. Microbial dormancy promotes microbial biomass and respiration across pulses of drying-wetting stress. **Soil Biology and Biochemistry** 116: 237-244.

Smith, N.G., Dukes, J.S., 2018. Drivers of leaf carbon exchange capacity across biomes at the continental scale. **Ecology** 99: 1610-1620.

van Gestel, N., Shi, Z., van Groenigen, K.J., Osenberg, C.W., Andresen, L.C., Dukes, J.S., Hovenden, M.J., Luo, Y., Michelsen, A., Pendall, E., Reich, P.B., Schuur, E.A.G., Hungate, B.A. 2018. Predicting soil carbon loss with warming. **Nature** 554: E4.

Knapp, A. K., Avolio, M. L., Beier, C., Carroll, C. J.W., Collins, S. L., Dukes, J. S., Fraser, L. H., Griffin-Nolan, R. J., Hoover, D. L., Jentsch, A., Loik, M. E., Phillips, R. P., Post, A. K., Sala, O. E., Slette, I. J., Yahdjian, L., Smith, M. D. 2017. Pushing precipitation to the extremes in distributed experiments: recommendations for simulating wet and dry years. **Global Change Biology** 23: 1774-1782.

Reinsch, S., Koller, E., Sowerby, A., de Dato, G., Estiarte, M., Guidolotti, G., Kovács-Láng, E., Kröel-Dulay, G., Lellei-Kovács, E., Larsen, K.S., Liberati, D., et al. 2017. Shrubland primary production and soil respiration diverge along European climate gradient. **Scientific Reports** 7: 43952.

Rogers, A., Medlyn, B.E., Dukes, J.S., Bonan, G., von Caemmerer, S., Dietze, M.C., Kattge, J., Leakey, A.D.B., Mercado, L.M., Niinemets, Ü., Prentice, I.C., Serbin, S.P., Sitch, S., Way, D.A., Zaehle, S. 2017. A Roadmap for Improving the Representation of Photosynthesis in Earth System Models. **New Phytologist** 213: 1-22.

Schuster, M.J., Dukes, J.S. 2017. Rainfall variability counteracts N addition by promoting invasive *Lonicera maackii* and extending phenology in prairie. **Ecological Applications** 27: 1555-1563.

Smith, N.G., Dukes, J.S. 2017. LCE: Leaf carbon exchange dataset for tropical, temperate, and boreal species of North and Central America. **Ecology** 98: 2978.

Smith, N.G., Dukes, J.S. 2017. Short-term acclimation to warmer temperatures accelerates leaf carbon exchange processes across plant types. **Global Change Biology** 23: 4840-4853.

Smith, N.G., Lombardozzi, D., Tawfik, A., Bonan, G., Dukes, J.S. 2017. Biophysical consequences of photosynthetic temperature acclimation for climate. **Journal of Advances in Modeling Earth Systems** 9: 536–547.

Top, S.M., Preston, C.M., Dukes, J.S., Tharayil, N. 2017. Climate Influences the Content and Chemical Composition of Foliar Tannins in Green and Senesced Tissues of *Quercus rubra*. **Frontiers in Plant Science**, 8: 423.

Andresen, L.C., Müller, C., de Dato, G., Dukes, J.S., Emmett, B.A., Estiarte, M., Jentsch, A., Kröel-Dulay, G., Lüscher, A., Niu, S., Peñuelas, J., Reich, P., Reinsch, S., Ogava, R., Schmidt, I.K., Schneider, M.K., Sternberg, M., Tietema, A., Zhu, K., Bilton, M.C. 2016. Shifting impacts of climate change: long-term patterns of plant response to elevated CO_2, drought and warming across ecosystems. **Advances in Ecological Research** 55: 437-473.

Carey, J.C., Tang, J., Templer, P.H., Kroeger, K.D., Crowther, T.W., Burton, A.J., Dukes, J.S., Emmett, B., Frey, S.D., Heskel, M.A., Jiang, L., and 32 others. 2016. Temperature response of soil respiration largely unaltered with experimental warming. **Proceedings of the National Academy of Sciences** 113:13797-13802.

Early, R.I., Bradley, B.A., Dukes, J.S., Lawler, J.J., Olden, J.D., Blumenthal, D.M., Gonzalez, P., Grosholz, E.D., Ibáñez, I., Miller, L.P., Sorte, C.J.B., Tatem, A.J. 2016. Global threats from invasive alien species in the 21st Century and national response capacities. **Nature Communications** 7: 12485.

Jin, Z., Zhuang, Q., Dukes, J.S., He, J.-S., Sokolov, A., Chen, M., Zhang, T., Luo, T. 2016. Temporal variability in the thermal requirements for vegetation phenology on the Tibetan Plateau and its implications for carbon dynamics. **Climatic Change** 138: 617-632.

Jin, Z., Zhuang, Q., Tan, Z., Dukes, J.S., Zheng, B., Melillo, J.M. 2016. Do maize models capture the impacts of heat and drought stresses on yield? Using algorithm ensembles to identify successful approaches. **Global Change Biology** 22: 3112–3126.

Lemoine, N.P., Sheffield, J., Dukes, J.S., Knapp, A.K., Smith, M.D. 2016. Terrestrial Precipitation Analysis (TPA): a resource for characterizing long-term precipitation regimes and extremes. **Methods in Ecology and Evolution** 7: 1396-1401.

Niu, S., Classen, A.T., Dukes, J.S., Kardol, P., Liu, L., Luo, Y., Rustad, L., Sun, J., Tang, J., Templer, P.H., Thomas, R.Q. 2016. Global patterns and substrate-based mechanisms of the terrestrial nitrogen cycle. **Ecology Letters** 19: 697-709.

Salazar-Villegas, A., Blagodatskaya, E., Dukes, J.S. 2016. Changes in the size of the active microbial pool explain short-term soil respiratory responses to temperature and moisture. **Frontiers in Microbiology** 7: 524.

Sanders-DeMott, R., Smith, N.G., Templer, P.H., Dukes, J.S. 2016. Towards an integrated understanding of terrestrial ecosystem feedbacks to climate. **New Phytologist** 209: 1363-1365.

Schuster, M. J., Smith, N. G., & Dukes, J. S. 2016. Responses of aboveground C and N pools to rainfall variability and nitrogen deposition are mediated by seasonal precipitation and plant community dynamics. **Biogeochemistry** 129: 389-400.

Smith, N.G., Goranson, C.E., Pold, A.G.M., Dukes, J.S. 2016. Characterizing the drivers of seedling leaf gas exchange responses to warming and altered precipitation: indirect and direct effects. **AOB Plants**. 8:plw066.

Smith, N.G., Malyshev, S.L., Shevliakova, E., Kattge, J., Dukes, J.S. 2016. Foliar temperature acclimation reduces simulated carbon sensitivity to climate. **Nature Climate Change** 6: 407-411.

Smith, N.G., Schuster, M.J., Dukes, J.S. 2016. Rainfall variability and nitrogen addition synergistically reduce plant diversity in a restored tallgrass prairie. **Journal of Applied Ecology** 53: 579–586.

Whisler, K.M., Rowe, H.I., Dukes, J.S. 2016. Relationships among land use, soil texture, species richness, and soil carbon in Midwestern tallgrass prairie, CRP and crop lands. **Agriculture, Ecosystems & Environment** 216: 237-246.

Ziska, L.H., Pettis, J.S., Edwards, J., Hancock, J.E., Tomecek, M.B., Clark, A., Dukes, J.S., Loladze, I., Polley, H.W. 2016. Rising atmospheric CO_2 is reducing the protein concentration of a floral pollen source essential for North American bees. **Proceedings of the Royal Society B** 283: 20160414.

Atkin, O.K., Bloomfield, K.J., Reich, P.B., Tjoelker, M.G., and 59 others, including Dukes, J. S. 2015. Global variability in leaf respiration in relation to climate, plant functional types and leaf traits. **New Phytologist** 206(2): 614-636.

Auyeung, D.S.N., Martiny, J.B.H., Dukes, J.S. 2015. Nitrification kinetics and ammonia-oxidizing community respond to warming and altered precipitation. **Ecosphere** 6(5): 83.

Fu, Z., Niu, S., Dukes, J.S. 2015. What have we learned from global change manipulative experiments in China? A meta-analysis. **Scientific Reports** 5:12344.

Guo, Q., Fei, S., Dukes, J.S., Oswalt, C.M., Iannone, B.V., III, Potter, K.M. 2015. A unified approach for quantifying invasibility and degree of invasion. **Ecology** 96: 2613–2621.

Kayler, Z.E., De Boeck, H.J., Fatichi, S., Grünzweig, J.M., Merbold, L., Beier, C., McDowell, N., Dukes, J.S. 2015. Experiments to Confront the Environmental Extremes of Climate Change. **Frontiers in Ecology and the Environment** 13(4): 219–225.

Kröel-Dulay, G., Ransijn, J., Schmidt, I.K., Beier, C., De Angelis, P., de Dato, G., Dukes, J.S., Emmett, B., Estiarte, M., Garadnai, J., Kongstad, J., Kovacs-Lang, E., Larsen, K.L., Liberati, D., Ogaya, R., Riis-Nielsen, T., Smith, A., Sowerby, A., Tietma, A., Penuelas, J. 2015. Increased sensitivity to climate change in disturbed ecosystems. **Nature Communications** 6: 6682.

Lombardozzi, D., Bonan, G., Smith, N.G., Dukes, J.S., and Fisher, R. 2015. Temperature acclimation of photosynthesis and respiration: a key uncertainty in the carbon cycle-climate feedback. **Geophysical Research Letters** 42: 8624-8631.

Suseela, V., Tharayil, N., Xing, B., Dukes, J.S. 2015. Warming and drought differentially influence the resorption of elemental and metabolite nitrogen pools in *Quercus rubra*. **Global Change Biology** 21: 4177–4195.

Bahn, M., Reichstein, M., Dukes, J.S., Smith, M.D., McDowell, N.G. 2014. Climate-biosphere interactions in a more extreme world. **New Phytologist** 202: 356-359.

Dukes, J.S., Classen, A.T., Wan, S., Langley, J.A. 2014. Using results from global change experiments to inform land model development and calibration. **New Phytologist** 204: 744-746.

Ibáñez, I., Diez, J.M., Miller, L.P., Olden, J.D., Sorte, C., Blumenthal, D.M., Bradley, B.A., D'Antonio, C.M., Dukes, J.S., Early, R.I., Grosholz, E.D., Lawler, J.J. 2014. Integrated Assessment of Biological Invasions. **Ecological Applications** 24: 25-37.

Polgar, C.A., Primack, R.B., Dukes, J.S., Schaaf, C., Wang, Z., Hoeppner, S.S. 2014. Tree leaf out response to temperature: comparing field observations, remote sensing, and a warming experiment. International **Journal of Biometeorology** 58: 1251-1257.

Rogers, A., Medlyn, B.E., Dukes, J.S. 2014. Improving representation of photosynthesis in Earth System Models. **New Phytologist** 204: 12-14.

Schuster, M.A., Dukes, J.S. 2014. Non-additive effects of invasive tree litter shift seasonal N release: a potential invasion feedback. **Oikos** 123: 1101-1111.

Suseela, V., Tharayil, N., Xing, B., Dukes, J.S. 2014. Warming alters potential enzyme activity but precipitation regulates chemical transformations in grass litter exposed to simulated climatic changes. **Soil Biology & Biochemistry** 75: 102-112.

Vicca, S., Bahn, M., Estiarte, M., van Loon, E. E., Vargas, R., Alberti, G., Ambus, P., Arain, M. A., Beier, C., Bentley, L. P., Borken, W., Buchmann, N., Collins, S. L., de Dato, G., Dukes, J. S., Escolar, C., Fay, P., Guidolotti, G., Hanson, P. J., Kahmen, A., Kröel-Dulay, G., Ladreiter-Knauss, T., Larsen, K. S., Lellei-Kovacs, E., Lebrija-Trejos, E., Maestre, F. T., Marhan, S., Marshall, M., Meir, P., Miao, Y., Muhr, J., Niklaus, P. A., Ogaya, R., Peñuelas, J., Poll, C., Rustad, L. E., Savage, K., Schindlbacher, A., Schmidt, I. K., Smith, A. R., Sotta, E. D., Suseela, V., Tietema, A., van Gestel, N., van Straaten, O., Wan, S., Weber, U., and Janssens, I. A. 2014. Can current moisture responses predict soil CO_2 efflux under altered precipitation regimes? A synthesis of manipulation experiments. **Biogeosciences** 11: 2991-3013.

Ward, S. M., Cousens, R.D., Bagavathiannan, M.V., Barney, J.N., Beckie, H.J., Busi, R., Davis, A.S., Dukes, J.S., Forcella, F., Freckleton, R.P., Gallandt, E.R., Hall, L.M., Jasieniuk, M., Lawton-Rauh, A., Lehnhoff, E.A., Liebman, M., Maxwell, B.D., Mesgaran, M.B., Murray, J.V., Neve, P., Nuñez, M.A., Pauchard, A., Queenborough, S.A., Webber, B.L. 2014. Agricultural Weed Research: A Critique and Two Proposals. **Weed Science** 64: 672-678.

Auyeung, D.S.N., Suseela, V., Dukes, J.S. 2013. Warming and drought reduce temperature sensitivity of nitrogen transformations. **Global Change Biology** 19: 662-676.

Fraser, L.H., Henry, H.A.L., Carlyle, C.N., White, S.R., Beierkuhnlein, C., Cahill Jr., J.F., Casper, B.B., Cleland, E., Collins, S.L., Dukes, J.S., Knapp, A.K., Lind, E., Long, R., Luo, Y., Reich, P.B., Smith, M.D., Sternberg, M., Turkington, R. 2013. Coordinated Distributed Experiments: an emerging tool for testing global hypotheses in ecology and environmental science. **Frontiers in Ecology and the Environment** 11: 147-155.

Ramage, B.S., Roman, L.A., Dukes, J.S. 2013. Relationships between urban tree communities and the biomes in which they reside. **Applied Vegetation Science** 16: 8-20.

Smith, N.G., Dukes, J.S. 2013. Plant respiration and photosynthesis in global-scale vegetation models: Incorporating acclimation to temperature and CO_2. **Global Change Biology** 19: 45-63.

Sorte, C., Ibáñez, I., Blumenthal, D.M., Molinari, N., Miller, L.P., Grosholz, E.D., Diez, J.M., D'Antonio, C.M., Olden, J.D., Jones, S.J., Dukes, J.S. 2013. Poised to prosper? A cross-system comparison of climate change effects on native and non-native species performance. **Ecology Letters** 16: 261-270.

Staudt, A., Leidner, A.K., Howard, J., Brauman, K.A., Dukes, J.S., Hansen, L., Paukert, C., Sabo, J., Solórzano, L.A. 2013. The added complications of climate change: understanding and managing biodiversity, ecosystems, and ecosystem services under multiple stressors. **Frontiers in Ecology and the Environment** 11: 494-501.

Steinweg, J.M., Dukes, J.S., Paul, E.A., Wallenstein, M.D. 2013. Microbial responses to multi-factor climate change: Effects on soil enzymes. **Frontiers in Microbiology** 4: 146.

Suseela, V., Dukes, J.S. 2013. The responses of soil and rhizosphere respiration to simulated climatic changes vary by season. **Ecology** 94:403-413.

Suseela, V., Tharayil, N., Xing, B., Dukes, J. S. 2013. Labile compounds in plant litter reduce the sensitivity of decomposition to warming and altered precipitation. **New Phytologist** 200: 122-133.

Bradley, B.A., Blumenthal, D.M., Early, R.I., Grosholz, E.D., Lawler, J.J., Miller, L.P., Sorte, C.J.B., D'Antonio, C.M., Diez, J.M., Dukes, J.S., Ibáñez, I., Olden, J.D. 2012. Global change, global

trade, and the next wave of plant invasions. **Frontiers in Ecology and the Environment** 10: 20-28.

Brzostek, E.R., Blair, J.M., Dukes, J.S., Frey, S.D., Hobbie, S.E., Melillo, J.M., Mitchell, R.J., Pendall, E., Reich, P.B., Shaver, G.R., Stefanski, A., Tjoelker, M.G. and Finzi, A.C. 2012. The effect of experimental warming and precipitation change on proteolytic enzyme activity: positive feedbacks to nitrogen availability are not universal. **Global Change Biology** 18: 2617-2625.

Dieleman, W.I.J., Vicca, S., Dijkstra, F.A., Hagedorn, F., Hovenden, M.J., Larsen, K.S., Morgan, J., Volder, A., Beier, C., Dukes, J.S., King, J., Leuzinger, S., Linder, S., Luo, Y., Oren, R., De Angelis, P., Tingey, D., Hoosbeek, M.R., Janssens, I.A. 2012. Simple additive effects are rare: Responses of biomass and soil processes to combined manipulations of CO_2 and temperature. **Global Change Biology** 18: 2681-2693.

Diez, J.M., D'Antonio, C.M., Dukes, J.S., Grosholz, E.D., Olden, J.D., Sorte, C.J.B., Blumenthal, D.M., Bradley, B.A., Early, R.I., Ibáñez, I., Jones, S.J., Lawler, J.J., Miller, L.P. 2012. Will extreme climatic events facilitate biological invasions? **Frontiers in Ecology and the Environment** 10: 249-257.

Hoeppner, S.S., Dukes, J.S. 2012. Interactive responses of old-field plant growth and composition to warming and precipitation. **Global Change Biology** 18: 1754-1768.

Rodgers, V.L., Hoeppner, S.S., Daley, M.J., Dukes, J.S. 2012. Leaf-level gas exchange and foliar chemistry of common old-field species responding to warming and precipitation treatments. **International Journal of Plant Sciences** 173: 957-970.

Rustad, L., Campbell, J., Dukes, J.S., Huntington, T., Fallon Lambert, K., Mohan, J., Rodenhouse, N. 2012. Changing climate, changing forests: The impacts of climate change on forests of the northeastern United States and eastern Canada. Gen. Tech. Rep. NRS-99. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 48 p.

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Steinweg, J.M., Dukes, J.S., Wallenstein, M.D. 2012. Modeling the effects of temperature and moisture on soil enzyme activity: Linking laboratory assays to continuous field data. **Soil Biology and Biochemistry** 55: 85-92.

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W.A. Salas, L.E. Sollenberger, R. Srygley, C. Stöckle, E.S. Takle, D. Timlin, J.W. White, R. Winfree, L. Wright-Morton, L.H. Ziska. 2012. Climate Change and Agriculture in the United States: Effects and Adaptation. USDA Technical Bulletin 1935. Washington, DC. 186 pages.

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Luo, Y., Melillo, J., Niu, S., Beier, C., Clark, J.S., Classen, A.T., Davidson, E., Dukes, J.S., Evans, R.D., Field, C.B., Czimczik, C.I., Keller, M., Kimball, B.A., Kueppers, L.M., Norby, R.J., Pelini, S.L., Pendall, E., Rastetter, E., Six, J., Smith, M., Tjoelker, M.G., Torn, M.S. 2011. Coordinated approaches to quantify long-term ecosystem dynamics in response to global change. **Global Change Biology** 17: 843-854.

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Hooper, D.U., Dukes, J.S. 2010. Functional composition controls invasion success in a California serpentine grassland. **Journal of Ecology** 98:764-777.

Charles, H., Dukes, J.S. 2009. Effects of warming and altered precipitation on plant and nutrient dynamics of a New England salt marsh. **Ecological Applications** 19: 1758-1773.

Dukes, J.S., Pontius, J., Orwig, D.A., Garnas, J.R., Rodgers, V.L., Brazee, N.J., Cooke, B.J., Theoharides, K.A., Stange, E.E., Harrington, R.A., Ehrenfeld, J.G., Gurevitch, J., Lerdau, M., Stinson, K., Wick, R., Ayres, M.P. 2009. Responses of insect pests, pathogens and invasive species to climate change in the forests of northeastern North America: What can we predict? **Canadian Journal of Forest Research** 39: 231-248.

Gerten, D., Luo, Y., le Maire, G., Parton, W.J., Keough, C., Weng, E., Beier, C., Ciais, P., Cramer, W., Dukes, J.S., Sowerby, A., Hanson, P.J., Knapp, A., Linder, S., Nepstad, D., Rustad, L. 2008. Modelled Effects of Precipitation on Ecosystem Carbon and Water Dynamics in Different Climatic Zones. **Global Change Biology** 14: 2365-2379.

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Luo, Y., Gerten, D., le Maire, G., Parton, W.J., Weng, E., Zhou, X., Keough, C., Beier, C., Ciais, P., Cramer, W., Dukes, J.S., Emmett, B., Hanson, P.J., Knapp, A., Linder, S., Nepstad, D., Rustad, L. 2008. Modelled Interactive Effects of Precipitation, Temperature, and CO_2 on Ecosystem Carbon and Water Dynamics in Different Climatic Zones. **Global Change Biology** 14: 1986-1999.

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Amatangelo, K.L., Dukes, J.S., Field, C.B. 2008. Annual grassland responses to litter manipulation. **Journal of Vegetation Science** 19: 605-612.

Dukes, J.S., Shaw, M.R. 2007. Grassland responses to the changing atmosphere and climate. Pages 218-229 in: Ecology and Management of California Grasslands, Stromberg, M., Corbin, J., and D'Antonio, C., eds. University of California Press, Berkeley.

Dukes, J.S. 2007. Tommorow's plant communities: Different, but how? **New Phytologist** 176: 235-237.

Theoharides, K.A., Dukes, J.S. 2007. Plant invasion across space and time: factors affecting nonindigenous species success during four stages of invasion. **New Phytologist** 176: 256-273. (***Invited Tansley Review***)

Charles, H., Dukes, J.S. 2007. Impacts of invasive species on ecosystem services. Pages 217-237 in: Biological Invasions, W. Nentwig, ed. Springer, Heidelberg.

Norby, R.J., Rustad, L.E., Dukes, J.S., Ojima, D.S., Parton, W.J., Del Grosso, S.J., McMurtrie, R.E., Pepper, D.A. 2007. Ecosystem responses to warming and interacting global change factors. Pages 45-58 in: Terrestrial Ecosystems in a Changing World, J. Canadell, D. Pataki, L. Pitelka, eds. Springer, New York.

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Dukes, J.S., Chiariello, N.R., Cleland, E.E., Moore, L.A., Shaw, M.R., Thayer, S., Tobeck, T., Mooney, H.A., Field, C.B. 2005. Responses of grassland production to single and multiple global environmental changes. **PLoS Biology**, 3(10): e319.

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Dukes, J.S. and Mooney, H.A. 2004. Disruption of ecosystem processes in western North America by invasive species. **Revista Chilena de Historia Natural**, 77: 411-437.

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Levine, J.M., Vilà M., D'Antonio, C.M., Dukes, J.S., Grigulis, K., and Lavorel, S. 2003. Mechanisms underlying the impacts of exotic plant invasions. **Proceedings of the Royal Society of London: Biological Sciences**, 270:775-781.

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Dukes, J.S. 2001. Productivity and complementarity in grassland microcosms of varying diversity. **Oikos**, 94 (3): 468-480.

Dukes, J.S. Biodiversity and invasibility in grassland microcosms. 2001. **Oecologia**, 126 (4): 563-568.

Dukes, J.S. 2000. Will the rising atmospheric CO_2 concentration affect invasive species? Pages 95-113 in: Invasive Species in a Changing World, H. Mooney and R. Hobbs, eds. Island Press, Washington.

Dukes, J.S. and Field, C.B. 2000. Diverse mechanisms for CO_2 effects on grassland litter decomposition. **Global Change Biology** 6 (2): 145-154.

Dukes, J.S. and Mooney, H.A. 1999. Does global change increase the success of biological invaders? **Trends in Ecology and Evolution** 14 (4): 135-139.

Bergmann, B.A., Dukes, J., and Stomp, A-M. 1997. Infection of *Pinus radiata* with *Agrobacterium rhizogenes* and long-term growth of detached hairy roots *in vitro*. **New Zealand Journal of Forestry Science** 27(1): 11-22.

Advisees' Single-Author Publications (peer-reviewed)

Schuster, M.J. 2016. Increased rainfall variability and N addition accelerate litter decomposition in a restored prairie. **Oecologia** 180: 645-655.

Smith, N.G. 2014. Testing for temperature acclimation of plant carbon exchange: a comment on "Global patterns of the responses of leaf-level photosynthesis and respiration in terrestrial plants to experimental warming" by Liang et al. **Journal of Plant Ecology**.

Aguilera, A.G. 2011. The influence of soil community density on plant-soil feedbacks: An important unknown in plant invasion. **Ecological Modelling** 222: 3413-3420.

Publications (non-peer reviewed)

Raymond, L., Gotham, D., McClain, W., Mukhopadhyay, S., Nateghi, R., Preckel, P.V., Schubert, P., Singh, S., Wachs, L., Widhalm, M. and Dukes, J. 2019. Climate Change and Indiana's Energy Sector: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Bowling, L.C., Widhalm, M., Cherkauer, K.A., Beckerman, J., Brouder, S., Buzan, J., Doering, O., Dukes, J., Ebner, P., Frankenburger, J. and Gramig, B. 2018. Indiana's Agriculture in a Changing Climate: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Day, J., Widhalm, M., Chin, N., Dorworth, L., Shah, K., Sydnor, S. and Dukes, J. 2018. Tourism and Recreation in a Warmer Indiana: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Filippelli, G., Widhalm, M., Filley, R., Comer, K., Ejeta, G., Field, W., Freeman, J.L., Gibson, J., Jay, S., Johnson, D. and Moreno-Madriñán, M.J., et al. 2018. Hoosiers' Health in a Changing Climate: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Höök, T., Foley, C., Collingsworth, P., Dorworth, L., Fisher, B., LaRue, E., Pryon, M., Tank, J., Widhalm, M. and Dukes, J. 2018. Aquatic Ecosystems in a Shifting Indiana Climate: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Phillips, R., Fei, S., Brandt, L., Polly, P.D., Zollner, P.A., Saunders, M., Clay, K., Iverson, L., Widhalm, M. and Dukes, J. 2018. Indiana's Future Forests: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Reynolds, H., Brandt, L., Widhalm, M., Fei, S., Fischer, B., Hardiman, B., Moxley, D., Sandweiss, E., Speer, J. and Dukes, J. 2018. Maintaining Indiana's Urban Green Spaces: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Widhalm, M., Hamlet, A., Byun, K., Robeson, S., Baldwin, M., Staten, P., Chiu, C.M., Coleman, J., Hall, B., Hoogewind, K., Huber, M., Kieu, C., Yoo, J., Dukes, J.S. 2018. Indiana's Past & Future Climate: A Report from the Indiana Climate Change Impacts Assessment. Purdue Climate Change Research Center, West Lafayette, Indiana, USA.

Selin, N.E., Kenney, M.A., Jefferson, A.J., Dukes, J.S., Hill, T.M., Schmitt Olabisi, L., Duffy, M.A. 2018. Call for new AAAS harassment policy. **Science** 361: 984.

Dukes, J.S., Hertel, T.W. 2018. Our changing climate: Adapting and responding to a new global reality. Pages 59-76 in Eise, J., Foster, K. (eds) How to Feed the World. Island Press, Washington, D.C.

Kenney, M.A., Dukes, J.S., Lips, K.R. and Hellmann, J.J., 2016. Engagement 2.0: increasing our collective impact. **Frontiers in Ecology and the Environment**, 14(8), p.403.

Herold, J.M., Lowe, Z.E., Dukes, J.S.. 2014. Integrated Vegetation Management (IVM) for INDOT Roadsides. Publication FHWA/IN/JTRP-2013/08. Joint Transportation Research Program, Indiana Department of Transportation and Purdue University, West Lafayette, Indiana. doi: 10.5703/1288284315210.

Rustad, L., Campbell, J., Cox, R., Dukes, J., Huntington, T.G., Magill, A., Richardson, A., Mohan, J., Pontius, J., Rodenhouse, N.L., Watson, M.R. 2009. NE Forests 2100: Evaluating climate-driven changes in northeastern North American Forests. **Canadian Journal of Forest Research** 39: v-x.

Hanson, P.J., Classen, A., Kueppers, L., Luo, Y., McDowell, N.G., Morris, J., Rogers, A. Thornton, P., Ceulemans, R., Dukes, J., Goulden, M., Jackson, R., Knapp, A., Kirschbaum, M., Lewin, K., MacCracken, M., Melillo, J., Ringler, T., and Workshop Participants. 2008. Ecosystem experiments: Understanding climate change impacts on ecosystems and feedbacks to the physical climate. Report of the workshop on Exploring Science Needs for the Next Generation of Climate Change and Elevated CO_2 Experiments in Terrestrial Ecosystems (14-18 April 2008, Arlington, VA), U.S. Department of Energy, 59 pp. http://per.ornl.gov/Experiment_Workshop_Report_16June08.pdf

Dukes, J.S. 2007. Fresh perspectives on timeless questions: Faculty response. **Frontiers in Ecology and the Environment** 5: 335.

Dukes, J.S. 2005. Starthistle invasion and biodiversity. **Views Online**. http://jrbp.stanford.edu/views_archive_dukes.php

Op-Eds (non-peer reviewed)

Dukes, J.S. 2019. Climate change impacts Indiana's residents, economy. **Indianapolis Star** October 27, 2019.

Dukes, J.S. 2017. No debate needed on climate change. **Indianapolis Star** August 2, 2017.

Major Grants

** If co-PI of proposal with split funding, Dr. Dukes's portion is in parentheses*

External grants since 2005		**Amount***
2015-20	**U.S. Dept. of Agriculture (co-PI)** Collaborative Research EaSM-3: Decadal prediction of sustainable agricultural and forest management - Earth system prediction differs from climate prediction (with R.Q. Thomas, G. Bonan, S. Frey, C. Goodale, S. Grandy, J. Sparks)	**$3,000,000** ***($500,000)***
2013-16	**U.S. Dept. of Energy: Terrestrial Ecosystem Sciences (co-PI)** Biogeochemical responses and feedbacks to climate change: synthetic meta-analyses relevant to earth system models (with B. Hungate, C. Osenberg, Y. Luo)	**$932,746** ***($96,635)***
2013-15	**NSF (PI)** DISSERTATION RESEARCH: Acclimation of photosynthesis and respiration to temperature under climate change: Understanding variation among species and biomes to improve climate models. (Dissertation improvement grant to N.G. Smith)	**$19,903**

2013-16	**NASA (PI)** Improving Earth system models via incorporation of temperature acclimation of plant carbon exchange (Earth System Sciences Fellowship to N.G. Smith)	**$90,000**
2012-14	**U.S. Dept. of Energy: Terrestrial Ecosystem Sciences (PI)** Climate Change Feedbacks from Interactions Between New and Old Carbon (with R. Phillips)	**$149,981**
2012-15	**NSF (co-PI)** Collaborative Research: Characterizing climate-induced qualitative changes in plant biopolymer composition and their influence on soil processes. (with N. Tharayil, B. Xing)	**$563,414** ***($135,910)***
2010-12	**National Center for Ecological Analysis and Synthesis (co-PI)** Climate change and invasive species: are non-natives poised for greater success in future climatic conditions (with C. Sorte, J. Lawler)	**$65,625**
2010-15	**National Science Foundation (PI)** RCN: MSM: ETBC: An Integrated Network for Terrestrial Ecosystem Research on Feedbacks to the Atmosphere and ClimatE: Linking experimentalists, ecosystem modelers, and Earth system modelers (with A. Classen, P, Thornton)	**$500,000**
2010-14	**USDA (co-PI/PI)** Biocontrol and carbon sequestration in agroecosystems: the role of land use in maximizing ecosystem services to agriculture and society (with H. Rowe, J. Holland, B. Gramig, J. Fargione)	**$445,090**
2010-11	**U.S. Dept. of Energy: National Institute for Climatic Change Research (PI)** The Boston-Area Climate Experiment: A gradient-based approach for characterizing ecosystem responses to warming and precipitation	**$84,999**
2009-12	**INDOT/JTRP (co-PI)** Roadside management training module for Integrated Vegetation Management of Indiana public ROW using native grasses (w/ Z. Lowe)	**$160,452**
2009-12	**NSF (co-PI)** Genetic bases and ecological significance of plant-microbe interactions in the rhizosphere (with R. Kesseli, A. Colón-Carmona, M. Shiaris)	**$695,545**
2007-10	**U.S. Dept. of Energy: National Institute for Climatic Change Research (PI)** The Boston-Area Climate Experiment: A gradient-based approach for characterizing ecosystem responses to warming and precipitation	**$422,608**
2007-10	**Subcontract: Colorado State University, on DOE-NICCR grant** Parsing the mechanisms that drive soil decomposition responses to climate change: a test of the substrate depletion and microbial acclimation hypotheses (PI: M. Wallenstein, Co-PIs R. Conant, E. Paul)	**$374,970** ***($22,050)***
2006-12	**NSF CAREER grant (PI)** The Boston-Area Climate Experiment	**$712,708**
2005-06	**Northeastern States Research Cooperative (co-PI)** A Synthesis of Climate Change Research in the Northeastern U.S. and Eastern Canada (with L. Rustad, A. Magill, A. Richardson, B. Rock, M. Watson, N. Willard)	**$72,428**
Total	**Funded external grants since 2005**	**$8,290,469** ***($4,173,934)***

Invited Research Presentations Since 2009

Bold denotes international venues or prominently featured talks.

2019 -- Tufts University, Medford, MA
-- Plant Biology Symposium, University of Massachusetts, Amherst, MA
-- Center for Plant Biology Symposium (keynote), Purdue University, West Lafayette, IN

2018 -- The 3rd International Conference on Biological Invasion and Global Change, **Kaifeng, China**.
-- Fall Meeting of the American Geophysical Union, Washington DC
-- Indiana University, Bloomington, IN

-- Hanover College, Hanover, IN

2017 -- Ecological Society of America Annual Meeting, Portland, OR
-- Purdue Geotechnical Society (keynote), West Lafayette, IN
-- University of Illinois, Urbana, IL

2016 -- Ecological Society of America Annual Meeting, Fort Lauderdale, FL
-- Tea Research Institute, Chinese Academy of Agricultural Science, **Hangzhou, China**.
-- INTERCAMBIO Purdue-Medellín (keynote), **Medellín, Colombia**.
-- INTERFACE workshop "After the extreme: Measuring and modeling impacts on terrestrial ecosystems when thresholds are exceeded," **Florence, Italy**.
-- National Forum on Climate and Pests, Washington, DC

2015 -- Ball State University, Muncie, IN
-- Brown University, Providence RI
-- Clemson University, Clemson, SC
-- University of Colorado, Boulder, CO (graduate student invited speaker)
-- Ecological Society of America Annual Meeting, Baltimore
-- U.S. Forest Service, "State of Science for Non-Native Invasive Species" Workshop, Phoenix, AZ
-- Department of Agronomy, Purdue University, West Lafayette, IN
-- Wabash College, Crawfordsville, IN

2014 -- Graduate student invited speaker, Virginia Tech, Blacksburg, VA
-- 1st ClimMani COST action workshop, "Integrating climate change experiments, data syntheses and modeling," **Aveiro, Portugal**.

2013 -- The importance of temperature responses of respiration and thermal acclimation for ESM predictions, 8th New Phytologist Workshop: Improving representation of leaf respiration in large-scale predictive climate-vegetation models, **Kioloa, Australia.**
-- Photosynthesis in a changing environment: incorporating acclimation in Earth system models, 16th International Congress on Photosynthesis Research, St. Louis, MO
-- Results and experience from INTERFACE experiments, INCREASE/INTER-ACT Symposium, **Copenhagen, Denmark**.

2012 -- Invasive species and climate change: science and science policy opportunities. Searle Center Roundtable on Natural Preservation in a Rapidly Changing Climate; Northwestern University School of Law.
-- Weeds and food security in a changing global environment: Threats and opportunities. Side Event on A Changing Climate: Research in Support to Crop and Livestock Pest and Disease Adaptation, Committee on World Food Security, CFS 39, FAO, **Rome, Italy**.
-- Highlights from the Boston-Area Climate Experiment. INCREASE Science meeting, **Kecskemét, Hungary.**
-- Climate Change and Invasive Species: Who cares? International workshop: Raising the Bar: Improving the standard and utility of weed/invasive plant research. Emigrant, Montana.
-- Can ecosystems keep putting the brakes on climate change? Insights from the Boston-Area Climate Experiment. Indiana University.
-- Climate Change and Invasive Species: Case studies of climate change adaptations. Strategic Management of Invasive Species in the Northwest US Workshop, Center for Invasive Plant Management, Portland, Oregon.
-- Burning buried sunshine: Yesterday's energy empowering tomorrow's weeds? University of Louisville.
-- Warmer, woodier, and weedier? Responses of invasive species and ecosystem processes to climate change. University of Illinois.
-- Warmer, woodier, and weedier? Responses of invasive species and ecosystem processes to climate change. Purdue University, Department of Agronomy.

-- The Boston-Area Climate Experiment: Responses of a local old-field ecosystem to simulated climate change. Harvard University.
-- Warmer, woodier, and weedier? Responses of invasive species and ecosystem processes to climate change. Rice University.

2011 -- Warmer and weedier? The fate of invasive plants in a changing world (**plenary lecture**). Midwest Invasive Plants Symposium/North Central Weed Science Society Meeting. Milwaukee, Wisconsin.
-- Stoichiometry as an ingredient of invasive species' success. 27th New Phytologist Symposium: Stoichiometric flexibility in terrestrial ecosystems under global change. Biosphere 2, Arizona.
-- Plant invasion across space and time: One framework for structuring invasion research. Ecological Society of America Annual Meeting, Austin.
-- Global environmental change. Advanced Ecology Lecture Series. Fudan University, **Shanghai, China.**
-- Invasive species and global change: interactions. Advanced Ecology Lecture Series. Fudan University, **Shanghai, China.**
-- Invasive species in a changing global environment: A rising challenge. Side Panel on "The Rising Challenges from Invasive Pests and Diseases in a Climate Changed World" organized by the California Secretary of Food and Agriculture, U.N. Framework Convention on Climate Change COP 16 Meeting, **Cancún, Mexico**.

2010 -- Interactions of environmental change, invasion, and community assembly: Perspectives from the field. Institute of Ecology and Botany, Hungarian Academy of Sciences.
-- How will terrestrial ecosystems respond to (and affect) the future climate? Department of Botany and Plant Pathology, Purdue University.
-- Responses of an old-field ecosystem to twelve combinations of warming and precipitation change. Ecological Society of America Annual Meeting, Pittsburgh.
-- A Warmer and Weedier Future? Challenges and new opportunities in a changing world (**Keynote lecture**). Annual Meeting of the Florida Exotic Pest Plant Council, Crystal River.
-- The Boston-Area Climate Experiment: Toasting Nature. University of California, San Diego.
-- Invasive species and climate change: Invasions in a Changing Global Environment (**Keynote symposium**). Joint annual meeting of the Society for Range Management and the Weed Science Society of America, Denver.
-- Invasive Plant Species: Problems, Management Challenges, & Outlook for the Future. Indiana Arborists Association, Indianapolis.
-- Invasive species in a changing climate: Initial results, basic predictions & needs. National Invasive Species Awareness Week, Washington, DC.

2009 -- Invasive species and climate change: challenges ahead. Meeting of the Invasive Species Advisory Committee of the U.S. Department of Interior, Washington, DC.
-- Climate change effects in grasslands: biodiversity and ecosystem services. DIVERSITAS Open Science Conference 2, **Cape Town, South Africa.**
-- Responses of three North American ecosystems to simulated environmental changes. Department of Forestry and Natural Resources, Purdue University.
-- A warmer, weedier world? Projecting future impacts of invasive plants. 17th Penn State Plant Biology Symposium: Regulatory role of soil resources in plant and ecosystem responses to climate change. University Park, PA.
-- Responses of three North American ecosystems to simulated environmental changes. Risø National Laboratory, **Denmark**.
-- Burning buried sunshine: Yesterday's energy changing tomorrow's environment. Northwestern University, Evanston, IL.

-- Burning buried sunshine: Yesterday's energy changing tomorrow's ecosystems. W.K. Kellogg Biological Station, Hickory Corners, MI.

Professional Service

Editorial board member

- *Frontiers in Ecology and the Environment* (Associate Editor, 2006-2018), *AoB PLANTS* (2012-2018), *Journal of Plant Ecology* (2006-2016). Guest editor, special issue on the Indiana Climate Change Impacts Assessment, *Climatic Change* (2018-2020).

State, national and international assessments

- Director, Indiana Climate Change Impacts Assessment, 2016-.
- Contributing author, Intergovernmental Panel on Climate Change, Sixth Assessment Report, 2019-.
- Participant and coauthor, Technical Input Teams for 2013 National Climate Assessment (2 sections for USDA-led Agriculture team, 1 section for USGS-led Biodiversity, Ecosystems, and Ecosystem Services team)
- Expert reviewer, Intergovernmental Panel on Climate Change, Fourth Assessment Report.

Advisory roles in state and national government efforts

- Member of the Climate-Related Market Risk Subcommittee of the Market Risk Advisory Committee, U.S. Commodities Futures Trading Commission, 2019-2021.
- Testimony to Storm Water Task Force, Indiana State Legislature, 2019.

External advisory boards, Private sector and Non-Governmental Organizations

- Advisory Council, Duke Energy Indiana, 2018-.
- Advisory Trustee, The Nature Conservancy of Indiana, 2018-.

Leadership and advisory roles in national and international research efforts

- Science, Technology, and Education Advisory Committee (STEAC), National Ecological Observatory Network, 2016-.
- Steering committee, Drought-Net (an NSF-funded research coordination network), 2014-.
- Project Director, INTERFACE (NSF-funded Research Coordination Network; Integrated Network for Terrestrial Ecosystem Research on Feedbacks to the Atmosphere and ClimatE), 2010-2017.
- Advisory board, European Union's "INCREASE" project (An Integrated Network on Climate Research Activities on Shrubland Ecosystems), 2009-2013.
- Steering committee, Northeastern Climate Change and Variability Project, 2005-2009.

Service to Professional Organizations

- Rapid Response Team, Ecological Society of America, 2012-.
- Advisory Board, How We Respond project, American Association for the Advancement of Science, 2018-2019.

Reviewer for publications, foundations, and government agencies

- Reviewer of manuscripts for *Acta Oecologia*, *American Midland Naturalist*, *American Naturalist*, *BioScience*, *Biological Conservation*, *Biological Invasions*, *Climatic Change*, *Diversity and Distributions*, *Ecological Applications*, *Ecology*, *Ecology Letters*, *Ecosystems*, *Functional Ecology*, *Global Change Biology*, Island Press, *Journal of Ecology*, *Journal of Plant Ecology*, the National Center for Energy Policy, *New Phytologist*, *Oecologia*, *Oikos*, *Plant Ecology*,

Proceedings of the National Academy of Sciences, Redefining Progress, *Restoration Ecology*, *Revista Chilena de Historia Natural*, *Science*, *Science of the Total Environment*, *Trends in Ecology and Evolution*, University of California Press, and *Water, Air, and Soil Pollution*.

- Reviewer of proposals for ETAg (Estonian Research Council), the European Science Foundation, the Kearney Foundation, the Marsden Fund (New Zealand), the National Science Foundation, the National Institute for Climatic Change Research, NWO – Netherlands Organization for Scientific Research, RANNÍS (Icelandic Research Fund), United States-Israel Binational Science Foundation, U.S. Civilian Research & Defense Foundation, the U.S. Department of Energy, and The Villum Kann Rasmussen Foundation (Denmark).
- Site reviewer for the U.S. Department of Energy, Program for Ecosystem Research, 2005, 2008; Terrestrial Ecosystem Science Program, 2019.

Organization of national and international meetings – lead role

- Co-lead organizer, Joint INTERFACE-CLIMMANI meeting: "After the extreme: Measuring and modeling impacts on terrestrial ecosystems when thresholds are exceeded," Florence, Italy, 2016.
- Lead organizer, INTERFACE workshop on "Frontiers in terrestrial climate feedbacks: Integrating models and experiments to explore climate feedbacks in an increasingly managed and warming world," St. Pete Beach, Florida, 2016.
- Co-organizer, New Phytologist workshop on "Improving representation of photosynthesis in Earth System Models." Montauk, New York, 2014.
- Co-lead organizer, Joint INTERFACE-CLIMMANI meeting: Scaling across space and time: Benefits and challenges of informing large-scale models with small-scale experiments. Mikulov, Czech Republic, 2013.
- Co-organizer, NCEAS working group on "Climate change and invasive species: are exotics poised for greater success in future climatic conditions?" Santa Barbara, California, 2011-2012 (4 meetings).
- Organizer, INTERFACE meeting: How do we improve Earth system models? Integrating Earth system models, ecosystem models, experiments and long-term data. Captiva Island, Florida, 2011.
- Co-lead organizer, Joint INTERFACE-CLIMMANI meeting: Nutrient constraints on the net carbon balance. Keflavík, Iceland, 2011.

Organization of national and international meetings – committee role

- Organizing committee, Workshop on Phosphorus Cycling in Terrestrial Ecosystems: Taking a new approach to advancing our fundamental understanding through a model-data connection. Townsend, Tennessee, 2016.
- Organizing committee, Open Science Conference on Climate Extremes and Biogeochemical Cycles in the Terrestrial Biosphere: Impacts and Feedbacks Across Species. Seefeld, Austria, 2013.
- Co-convener, BG1.6: Climate extremes, ecosystems and biogeochemical cycles. European Geosciences Union General Assembly, 2012.
- Organizing committee, 27th New Phytologist Symposium: Stoichiometric flexibility in terrestrial ecosystems under global change. Biosphere 2, Arizona, 2011.
- Steering committee, Department of Energy Workshop "Exploring the Possibilities for Next Generation Climatic Change and Elevated CO_2 Experiments in Terrestrial Ecosystems for the U.S. Department of Energy," 2007-8.
- Steering Committee, TERACC Meeting, "Interactions Between Increasing CO_2 and Temperature in Terrestrial Ecosystems." Tahoe City, California, 2003.

Symposium or session organization

- Lead organizer, Oral and Poster Sessions: Reducing uncertainty in terrestrial feedbacks to climate change through global change experiments and models. Fall meeting of the American Geophysical Union, San Francisco, CA, 2015.
- Co-organizer, Organized Oral Session: Creative Approaches for Addressing Ecological Uncertainty in Earth System Models. Ecological Society of America Annual Meeting, Baltimore, MD 2015.
- Co-organizer, Organized Oral Session: The Ecological Impacts of Drought as Revealed Through Experimental Approaches. Ecological Society of America Annual Meeting, Baltimore, MD 2015.
- Co-leader, oral session on Experimental Manipulations of Ecosystems. BIOGEOMON 2012: The 7th International Symposium on Ecosystem Behavior. Northport, Maine, USA, 2012 (upcoming).
- Co-organizer, Organized Oral Session: Invasive Species and Climate Change: Challenges and Opportunities in a Warmer World. Ecological Society of America Annual Meeting, Pittsburgh, PA, 2010.
- Co-organizer, ESA symposium: Biological invasions in a time of global change. Ecological Society of America, Savannah, GA, 2003.

Internal service (at Purdue; prior service at UMass Boston omitted)

- Search Committee, Head, Department of Forestry and Natural Resources, 2015
- Search Committee, Ecologist, Department of Biological Sciences, 2014
- Search Sub-Committees, Ecology and Forestry and Natural Resources, Center for Molecular Agriculture, 2014, 2015.
- Co-Chair, Sustainability Committee, College of Agriculture, 2013-14.
- Chair, Sustainability Committee, Forestry and Natural Resources, 2009-14.
- Vice-Chair (2011-) and member (2010-), Equipment Committee, Forestry and Natural Resources
- Visiting Scientist and Seminar Speaker Committee, Forestry and Natural Resources, 2011-
- Executive Committee, Purdue Climate Change Research Center, 2010-
- Graduate Committee, Ecological Sciences and Engineering, 2009-2016.
- Search Committee, Climate Modeler, Purdue Climate Change Research Center, 2011-12.
- IT Energy Conservation Committee, College of Agriculture, 2010-11
- C4E Task Force, 2011-12

Service to international universities

- External Examiner, University of Kwazulu-Natal (Durban, South Africa), 2004. Ph.D. Thesis of N. Motete

MEDIA COVERAGE

2019 Agence France-Presse, Indiana Public Media, Indianapolis Star, The Scientist, WFYI-TV, WLFI-TV, Coverage of Indiana Climate Change Impacts Assessment in dozens of media outlets around Indiana and the United States.

2018 Chicago Tribune, Indianapolis Star, NBCNews.com, Coverage of Indiana Climate Change Impacts Assessment in dozens of media outlets around Indiana and the United States.

2017 AgProfessional.com, Göteborgs-Posten (Sweden), The Herald Bulletin (Anderson, IN), Hufvudstadsbladet (Finland), Indianapolis Star, Kokomo (IN) Perspective, Popular Science.

2016 BBC News, BBC Turkey, Muncie Star Press, National Public Radio (Goats & Soda), Quo (Spain), Science Friday (nationally syndicated US public radio talk show), Science News,

Sciencetimes (South Korea), SVT Nyheter (Sweden), TakePart, Voice of America (Africa News Tonight), WBAA-FM, Wildlife Society, Xinhua, Yale E360.

2015 Newsweek magazine, Indianapolis Business Journal, Lafayette Journal and Courier, Muncie Star Press (2x), St. Louis Public Radio, WIBC Radio Indianapolis

2014 Dubois County Herald, Lafayette Journal and Courier, Purdue Exponent, WLFI-TV Lafayette.

2013 USA Today, Scientific American Blog, Reddit, Lafayette Journal and Courier

2012 National Geographic News, WIBC-FM Indianapolis, Delta Farm Press, Futurity.org, Santa Fe New Mexican.

2011 The New York Times, Minneapolis Star Tribune, Climate Central, On Earth Magazine, The Guardian (guardian.co.uk), Natural History Magazine, New Scientist Magazine, UPI, Earth Times, Summit County Voice, Western Farm Press, Frankfurter Allgemeine (FAZ.com), Imperial Valley News, Ohio Farmer, Dalje.com (Croatia).

2010 The Boston Globe, WLFI-TV Lafayette.

2008 Nationen (Norwegian newspaper based in Oslo), OpEdNews.com.

2007 The Associated Press (wide coverage), The Boston Globe, The Daily News Tribune, The Los Angeles Times (2 stories), The Milton Times, WBZ-AM Boston, WBZ-TV Boston, WCVB-TV Boston.

2006 Albuquerque Journal, Salon.com, Swedish Broadcasting Corporation.

2005 BusinessWeek Magazine, Discover Magazine, The Guardian (UK national newspaper), ScienCentral News (2 interviews broadcast on ABC affiliates in local markets nationwide and available online).

2004 BBC World Service, BBC Radio 4, CNet News, "Your Morning" on CN8 (cable television network, Eastern U.S.), Discover Magazine, German Public Radio, Mother Earth News Magazine, Natural History Magazine, Newsday, Radio Netherlands, San Francisco Chronicle, WBZ-AM Boston, "Commonwealth Journal" (Massachusetts weekly public radio program), "Soundings" (KVMR-FM, northern California).

2003 Fourth most popular science story of 2003 (according to EurekAlert! news service - "Burning buried sunshine"), The Economist, U.S. News & World Report, ABC News online, Der Spiegel (German weekly news magazine), The Guardian, Die Welt (German national newspaper), Radio National (Australia), CBC Radio (Canada), BBC News Online, Science Magazine, Science News Magazine, Nature Science Update, Slashdot, Frontiers in Ecology and the Environment, The Salt Lake Tribune (front page, above fold),The Washington Times, The Jerusalem Post, De Tijd (Belgian national newspaper), Bilim ve Teknik (science magazine, Turkey), "Access Utah" (Utah Public Radio), "The Public Affairs Hour" with Blair Feulner (KCPW-FM), and coverage on more than 50 other websites and print outlets, including science news websites in the U.S., the Czech Republic, Estonia, India, Italy, Russia, South Africa, Spain, Venezuela, and elsewhere.

Other Public outreach

Public education programming

Presenter on **Purdue ZipTrip** "Plant Science: The Green Machine" 2013, 2014, 2015, 2017.
Exhibit at 2017 Indiana State Fair ("Indiana's Climate Crossroads," in the Purdue Extension hall).

Public lectures 2014-2017 (dozens given in 2018-19)

- Climate Leadership Summit, Indianapolis, 2017
- Wolf Park Summer Lecture Series, Battle Ground, IN 2017
- Greater Lafayette Progressives, West Lafayette, IN 2017
- Indiana Council on World Affairs, Indianapolis, 2016
- Science on Tap, Lafayette Brewing Company, 2015

- Road Scholar program, West Lafayette, IN, 2014
- Unitarian Universalist Church, West Lafayette, IN, 2014

Courses Taught

Purdue University, 2008-

- Biological Sciences 286, Introduction to Ecology and Evolution (spring 2010, 2012)
- Biological Sciences 495, Global Change Ecology Seminar (spring 2014)
- Biological Sciences 652, Advanced Ecology Discussion (every fall)
- Biological Sciences 696, Current Topics in Global Change Ecology (spring 2014)
- Biological Sciences 696, Current Topics in Climate Change Research (spring 2015, fall 2016)
- Forestry & Natural Resources 103, Intro to Environmental Conservation (every fall through 2014; cross-listed and co-taught every semester since fall 2015)
- Forestry & Natural Resources 198, The Nature of Wild Things (learning community class; every fall since 2013)
- Forestry & Natural Resources 594, Mechanisms and Ecological Impacts of Climate Change (spring 2011, 2013)
- Forestry & Natural Resources 594, The Ecology of Drought (distributed graduate seminar at five universities; spring 2017)

University of Massachusetts, Boston, 2004-2008

- Biology 290, Population Biology (every spring semester)
- Biology 336, Ecosystem Ecology (Fall 2007)
- Biology 381, Ecosystem Ecology ("Special topics" course, Fall 2005)
- Biology 535 & 597B, Teaching Ecology, Evolution, and the Diversity of Life (Summer 2005, 2006, 2007)
- Biology 636, Advanced Ecosystem Ecology (Fall 2007)
- Biology 653J, Current topics in the ecology of communities, ecosystems, and the globe (Fall 2004)
- Biology 697, Advanced Ecosystem Ecology ("Special topics" course, Fall 2005)
- Biology 697, Climate Change: Mechanisms and Biological Impacts (Fall 2006)

Advisees

Graduate Students Supervised (Major Advisor role only)

Student	Degree	Role	Status	University / Department
Haley Flickinger	**PhD**	**Chair/Advisor**	**In Progress**	Purdue / Biological Sciences
Laura Jessup	**PhD**	**Chair/Advisor**	**In Progress**	Purdue / ESE / FNR
Maria del Rosario Uribe Diosa	**PhD**	**Chair/Advisor**	**In Progress**	Purdue / FNR
Akane Ota	**MS**	**Chair/Advisor**	**Completed**	Purdue / FNR
Laura Ploughe	**PhD**	**Chair/Advisor**	**Completed**	Purdue / Biological Sciences
Zachary Reaver	**MS**	**Chair/Advisor**	**Completed**	Purdue / ESE / FNR
Megan Scott	**MS**	**Chair/Advisor**	**Completed – 2017**	Purdue / ESE / FNR
Alejandro Salazar[Colciencias Fellow]	**PhD**	**Chair/Advisor**	**Completed – 2017**	Purdue / Biological Sciences
Nicholas Smith[NASA ES Fellow]	**PhD**	**Chair/Advisor**	**Completed – 2016**	Purdue / Biological Sciences
Michael Schuster[Natl. Needs Fellow]	**PhD**	**Chair/Advisor**	**Completed – 2015**	Purdue / ESE / FNR
Jamie Herold	**MS**	**Co-chair/Advisor**	**Completed – 2013**	Purdue / FNR
Katie Duszynski	**MS**	**Co-chair/Advisor**	**Completed – 2012**	Purdue / FNR
Dolaporn "Novem" Auyeung	**PhD**	**Chair/Advisor**	**Completed – 2012**	Purdue / FNR

Vidya Suseela	**PhD**	**Chair/Advisor**	**Completed – 2012**	Purdue / FNR
Anna Aguilera[NSF Grad Fellow]	**PhD**	**Chair/Advisor**	**Completed – 2011**	UMass Boston / Biology
Kathleen Theoharides	**MS**	**Chair/Advisor**	**Completed – 2007**	UMass Boston / Biology
Heather Charles	**MS**	**Chair/Advisor**	**Completed – 2007**	UMass Boston / Biology

Post Doctoral Research Scientists and Technicians Supervised

Staff Member	Degree	Position	Year(s)	Institution
Indira Paudel	Ph.D.	Post-doc	2019-	Purdue
Jay Szymborski	B.S.	Technician	2019-	Purdue
Elin Jacobs	Ph.D.	Res. Asst. Prof.	2019-	Purdue
Elin Jacobs	Ph.D.	Post-doc	2017-2019	Purdue
Megan Scott	M.S.	Technician	2017-2019	Purdue
Jinwoong Yoo	Ph.D.	Post-doc	2016-2018	Purdue
Kimberly Hoogewind	Ph.D.	Post-doc	2017	Purdue
Nick Smith	Ph.D.	Post-doc	2016	Purdue
Jeanne Osnas	Ph.D.	Post-doc	2014-2016	Purdue
Risa McNellis	B.S.	Technician	2016-	Purdue
Lindsey Curran	M.S.	Technician	2015-2016	Purdue
Nadya Muchoney	B.S.	Technician	2014-2015	Purdue
Vince Webb	Ph.D.	Technician	2013-2014	Purdue
Susanne Hoeppner	Ph.D.	Post-doc	2008-2011	UMass Boston / Purdue
Carol Goranson	M.S.	Technician	2006-2013	UMass Boston / Purdue
Grace Pold	B.S.	Technician	2011-2012	Purdue
Hollie Emery	B.S.	Technician	2009-2010	Purdue
Brita Jessen	B.S.	Technician	2007-2008	UMass Boston
Novem Auyeung	B.S.	Technician	2006-2007	UMass Boston

Visiting Scientists Hosted

Staff Member	Title and University	Year(s)
Jing Wang	Postdoctoral researcher, Hebei University (China)	2019-2020
Irfan Rashid	Assistant professor, University of Kashmir, Srinagar (India)	2017-2018
Yuan Miao	Graduate student, Henan University (China)	2015-2016
Guoyong Li	Associate professor, Henan University	2014-2015
Harmony Dalgleish	Post-doc, Utah State University	2008-2009

Educational Exhibits

- "Indiana's Climate Crossroads." Exhibit for Purdue College of Agriculture's exhibition space at the Indiana State Fair, Indianapolis, 2017.
- "The Boston-Area Climate Experiment." Exhibit for National Science Foundation's exhibition space at AAAS Annual Meeting, Boston, 2013.
- "Can *you* reduce global warming? Yes, you can!" UMass Boston display at 2007 New England Spring Flower Show, Boston. (Theme: Yes, you can!) Massachusetts Horticultural Society. **~10,000 visitors**, **awarded MHS Silver Medal**.

- The Boston-Area Climate Experiment's Traveling Public Education Exhibit. University of Massachusetts Boston Campus Center. Visitors included **190 middle school students** from Boston Public Schools. 2007.
- The Boston-Area Climate Experiment's Climate Change Classroom. Waltham, Massachusetts. 2007-present.