

Curriculum Vitae

MELINDA D. SMITH

Dept. of Ecology and Evolutionary Biology
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Education

1992 University of Colorado, Boulder, B.A. E.P.O. Biology
1998 Kansas State University, Manhattan, M.Sc. Biology
2002 Kansas State University, Manhattan, Ph.D. in Biology

Professional Experience

Associate Professor, Department of Ecology and Evolutionary Biology, Yale University, New Haven, CT, 2010-present
Assistant Professor, Department of Ecology and Evolutionary Biology, Yale University, New Haven, CT, 2004-2010
Adjunct Graduate Faculty, Division of Biology, Kansas State University, Manhattan, KS, 2004-present
Adjunct Faculty, School of Life Sciences, Arizona State University, Tempe, AZ, 2007-2008
Postdoctoral Fellow, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 2002-2004

Research Interests

Biodiversity and ecosystem functioning; Causes and consequences of invasion; Climate change; Community ecology; Dominance and the functioning of ecosystems; Ecological genomics; Extreme climatic events; Global environmental change; Grassland dynamics; Patterns and drivers of productivity; Plant community ecology

Honors and Awards

Endowed Postdoctoral Fellowship, Yale University, \$37,000, 2008-2009
Junior Faculty Sabbatical Fellowship, Yale University, 2007-2008
Endowed Postdoctoral Fellowship, Yale University, \$37,000, 2006-2007
Endowed Postdoctoral Fellowship, Yale University, \$37,000, 2004-2005
Murray F. Buell Award for Excellence in Ecology, Ecological Society of America, 2001
Environmental Protection Agency STAR Fellowship, \$90,400, 2000-2002
Sigma Xi Student Travel Award, Kansas State University, 1998, 2000
Graduate Student Council Travel Award, 1999, 2002
Center for Basic Cancer Research Travel Award, Division of Biology, Kansas State University, 1998, 1999, 2001, 2002
Chris Edler Memorial for Outstanding Konza Prairie Graduate Student, Division of Biology, Kansas State University, 1999
Michael Scott Watkins Award for Excellence in Teaching, Division of Biology, Kansas State University, 1999
Outstanding Student Presentation Award, Division of Biology, Kansas State University, 1999

Courses Taught

Advanced Topics Seminar (E&EB 500) - Sp 05, Fall 06, Sp 09, Fall 09

Ecosystem Analysis (E&EB 330/630) - Fall 09
Field Ecology (E&EB 230/530) - Fall 04-06
Foundations of Ecology (E&EB 712) – Sp 10
General Ecology (E&EB 220/520) - Fall 04, 05, 09
Mathematical Models and Quantitative Methods (E&EB 678) - Sp 09

Publications

Journal Articles:

Avolio, M.L., C.C. Chang, and M.D. Smith. 2011. Assessing fine-scale genotypic structure of *Andropogon gerardii* in the tallgrass prairie. *American Midland Naturalist*, in press.

Collins, S.L., S.R. Carpenter, S.M. Swinton, T.L. Gragson, N.B. Grimm, J.M. Grove, S.L. Harlan, A.K. Knapp, G.P. Kofinas, J.J. Magnuson, W.H. McDowell, J.M. Melack, L.A. Ogden, D. Orstein, G.P. Robertson, M.D. Smith, A.C. Witmer. 2011. An integrated conceptual framework for social-ecological research. *Frontiers in Ecology and the Environment*, in press.

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

Smith, M.D. 2011. The ecological role of climate extremes: current understanding and future prospects. *Journal of Ecology*, in press.

Smith, M.D. 2011. An ecological perspective on extreme climatic events: a synthetic definition and framework to guide future research. *Journal of Ecology*, in press. (lead paper in Ecological Consequences of Climate Extremes Special Feature)

Melzer, S.E., A.K. Knapp, K.P. Kirkman, M.D. Smith, J.M. Blair, and E.F. Kelly. 2010. Fire and grazing impacts on silica production and storage in grass dominated ecosystems. *Biogeochemistry* 97:263-278.

Travers, S.E., Z. Tang, D. Caragea, K.A. Garrett, S.H. Hulbert, J.E. Leach, J. Bai, A. Sahel, A.K. Knapp, P.A. Fay, J. Nippert, P.S. Schnable, and M.D. Smith. 2010. Climate change induced dynamics in gene expression of *Andropogon gerardii*. *Journal of Ecology* 98:374-383. (Editor's choice)

Buis, G.M., J.M. Blair, D.E. Burkepille, C.E. Burns, A.J. Chamberlain, P.L. Chapman, S.L. Collins, R.W.S. Fynn, N. Govender, K.P. Kirkman, M.D. Smith, and A.K. Knapp. 2009. Controls of aboveground net primary production in mesic savanna grasslands: an inter-hemispheric comparison. *Ecosystems* 12:982-995.

Burns, C.E., S.L. Collins, and M.D. Smith. 2009. Plant community response to loss of large herbivores: Comparing consequences in a South African and North American grassland. *Biodiversity and Conservation* 18:2327-2342.

Cebrian, J., J.B. Shurin, E.T. Borer, B. Cardinale, J. Ngai, M.D. Smith and W. Fagan. 2009. Producer nutritional quality controls ecosystem trophic structure. *PLoS ONE* 4:e4929.

- Hillebrand, H., E.T. Borer, M.E.S. Bracken, B.J. Cardinale, J. Cebrian, E.E. Cleland, J.J. Elser, D.S. Gruner, W.S. Harpole, J.T. Ngai, S. Sandin, E.W. Seabloom, J.B. Shurin, J.E. Smith, and M.D. Smith. 2009. Herbivore metabolism and stoichiometry each constrain herbivory at different organizational scales across ecosystems. *Ecology Letters* 12:516-527.
- Leakey, A.D.B., E.A. Ainsworth, S.M. Bernard, R.J. Cody Markelz, D.R. Ort, S.A. Placella, A. Rogers, M.D. Smith, E.A. Sudderth, D.J. Weston, S.D. Wullschleger, S. Yuan. 2009. Gene expression profiling: opening the black box of plant ecosystem responses to global change. *Global Change Biology* 15:1201-1213.
- Nippert, J.B., P.A. Fay, J.D. Carlisle, A.K. Knapp, and M.D. Smith. 2009. Ecophysiological responses of two dominant grasses to altered temperature and precipitation regimes. *Acta Oecologia* 35:400-408.
- Smith, M.D., A.K. Knapp, and S.L. Collins. 2009. A framework for assessing ecosystem dynamics in response to chronic resource alterations induced by global change. *Ecology* 90:3279-3289.
- Drake, J.M., E.E. Cleland, M.C. Horner-Devine, E. Fleishman, C. Bowles, M.D. Smith, K. Carney, S. Emery, J. Gramling, D.B. Vandermast, and J.B. Grace. 2008. Do non-native plant species affect the shape of productivity-diversity relationships? *American Midland Naturalist* 159:55-66.
- Han, X., S.P. Denny, K.A. Garrett, L. Fang and M.D. Smith. 2008. Comparison of damage to native and exotic tallgrass prairie plants by natural enemies. *Plant Ecology* 198:197-210.
- Knapp, A.K., C. Beier, D. Briske, A.T. Classen, Y. Luo, M. Reichstein, M.D. Smith, S.D. Smith, J.E. Bell, P.A. Fay, J.L. Heisler, S.W. Leavitt, R. Sherry, B. Smith, and E. Weng. 2008. Consequences of more extreme precipitation regimes for terrestrial ecosystems. *BioScience* 58: 811-821.
- Veen, G.F., J.M. Blair, M.D. Smith, S.L. Collins. 2008. Influence of grazing and fire frequency on small-scale plant community structure and resource variability in native tallgrass prairie. *Oikos* 117:859-866.
- Fridley, J.D. J.J. Stachowicz, S. Naeem, D.F. Sax, E.W. Seabloom, M.D. Smith, T.J. Stohlgren, D. Tilman, and B. Von Holle. 2007. The invasion paradox: reconciling pattern and process in species invasions. *Ecology* 89:3-17.
- Grace, J.B., T.M. Anderson, M.D. Smith, E. Seabloom, S.J. Andelman, G. Meche, E. Weiher, L.K. Allain, H. Jutila, M. Sankaran, J. Knops, M. Ritchie, and M.R. Willig. 2007. Does species diversity limit productivity in natural grassland communities? *Ecology Letters* 10:680-689.
- Travers, S.E., M.D. Smith, J. Bai, S.H. Hulbert, J.E. Leach, P.S. Schnable, A.K. Knapp, G.A. Milliken, P.A. Fay, K.A. Garrett. 2007. Ecological genomics: making the leap from model systems in the lab to native populations in the field. *Frontiers in Ecology and the Environment* 5:19-24.
- Collins, S.L., and M.D. Smith. 2006. Scale-dependent interaction of fire and grazing on community heterogeneity in tallgrass prairie. *Ecology* 87:2058-2067.

- Knapp, A.K., C.E. Burns, R.W.S. Fynn, K.P. Kirkman, C.D. Morris, and M.D. Smith. 2006. Convergence and contingency in production-precipitation relationships in North American and South African C₄ savanna grasslands. *Oecologia* 149:456-464.
- Swemmer, A.M., A.K. Knapp, and M.D. Smith. 2006. Growth responses of the two dominant C₄ grass species to altered water availability. *International Journal of Plant Sciences* 167: 1001-1010.
- White, E.P., P.B. Adler, W.K. Lauenroth, R.A. Gill, D. Greenberg, D.M. Kaufman, A. Rassweiler, R.A. Rusak, M.D. Smith, J. Steinbeck, R.B. Waide, and J. Yao. 2006. A comparison of the species-time relationship across ecosystems and taxonomic groups. *Oikos* 112: 185-195.
- Carter, G.A., A.K. Knapp, J.E. Anderson, G.A. Hoch, and M.D. Smith. 2005. Indicators of plant species richness in AVIRIS spectra of a mesic grassland. *Remote Sensing of Environment* 98: 304-316.
- Schaefer, J., K. Gido, M. Smith. 2005. A test for community change using a null model approach. *Ecological Applications* 15:1761-1771.
- Chalcraft, D.R., J.W. Williams, M.D. Smith, and M.R. Willig. 2004. Scale dependence in the relationship between species richness and productivity: the role of species turnover. *Ecology* 85:2701-2708.
- Cleland, E.E., M.D. Smith, S.J. Andelman, C. Bowles, K.M. Carney, M.C. Horner-Devine, J.M. Drake, S.M. Emery, J. Gramling, and D.B. Vandermaast. 2004. Invasion in space and time: non-native species richness and relative abundance respond to interannual variation in productivity and diversity. *Ecology Letters* 7:947-957.
- Huxman, T.R.* , M.D. Smith*, P.A. Fay, A.K. Knapp, M.R. Shaw, M.E. Loik, S.D. Smith, D.T. Tissue, J.C. Zak, J.F. Weltzin, W.T. Pockman, O.E. Sala, B. Haddad, J. Harte, G.W. Koch, S. Schwinning, E.E. Small, and D.G. Williams. 2004. Convergence across biomes to a common rain-use efficiency. *Nature* 429:651-654. *denotes equal contribution
- Knapp, A.K., M.D. Smith, S.L. Collins, N. Zambatis, M. Peel, S. Emery, J. Wojdak, M.C. Horner-Devine, H. Biggs, J. Kruger, and S. Andelman. 2004. Generality in ecology: testing North American grassland rules in South African savannas. *Frontiers in Ecology and the Environment* 2: 483-491.
- Smith, M.D., J. Wilcox, T. Kelly, and A.K. Knapp. 2004. Dominance not richness determines invasibility of tallgrass prairie. *Oikos* 106:253-262.
- Smith, M.D. and A.K. Knapp. 2003. Dominant species maintain ecosystem function with non-random species loss. *Ecology Letters* 6:509-517.
- Weltzin, J.F., M.E. Loik, S. Schwinning, D.G. Williams, P. Fay, B. Haddad, J. Harte, T.E. Huxman, A.K. Knapp, G. Lin, W.T. Pockman, M.R. Shaw, E.E. Small, M.D. Smith, S.D. Smith, D.T. Tissue, and J.C. Zak. 2003. Assessing the response of terrestrial ecosystems to potential changes in precipitation. *BioScience* 53:941-952.
- Wilson, W.G., P. Lundberg, D.P. Vasquez, M.D. Smith, W. Langford, K.L. Gross, and G.G. Mittelbach. 2003. Biodiversity and species interactions: extending Lotka-Volterra community theory. *Ecology Letters* 6:944-952.

Knapp, A.K., P.A. Fay, J.M. Blair, S.L. Collins, M.D. Smith, J.D. Carlisle, C.S. Harper, B.T. Danner, M.S. Lett, and J.K. McCarron. 2002. Rainfall variability, carbon cycling, and plant species diversity in a mesic grassland. *Science* 298:2202-2205.

Knapp, A.K. and M.D. Smith. 2001. Interannual variability in net primary production and precipitation: Response. *Science* 293: 1723a.

Knapp, A.K. and M.D. Smith. 2001. Variation among biomes in temporal dynamics of aboveground primary production. *Science* 291: 481-484.

Smith, M.D. and A.K. Knapp. 2001. Physiological and morphological traits of exotic, invasive exotic, and native plant species in tallgrass prairie. *International Journal of Plant Sciences* 162:785-792.

Wilson, G.W.T., D.C. Hartnett, M.D. Smith, and K.L. Kobbeman. 2001. Effects of mycorrhizas on growth and demography of tallgrass prairie forbs. *American Journal of Botany* 88:1452-1457.

Smith, M.D., and A.K. Knapp. 2001. Size of the local species pool determines invasibility of a C₄-dominated grassland. *Oikos* 92:55-61.

Smith, M.D., C.W. Rice, and D.C. Hartnett. 2000. Effects of long-term fungicide applications on microbial properties in tallgrass prairie soil. *Soil Biology and Biochemistry* 32:935-946.

Smith, M.D., D.C. Hartnett, and G.W.T. Wilson. 1999. Interacting influence of mycorrhizal symbiosis and competition on plant diversity in tallgrass prairie. *Oecologia* 121:574-582.

Smith, M.D. and A.K. Knapp. 1999. Exotic plant species in a C₄-dominated grassland: invasibility, disturbance, and community structure. *Oecologia* 120:605-612.

Manuscripts (in review, submitted or in prep):

Avolio, M.L., J.M. Beaulieu, and M.D. Smith. Climate change increases genetic diversity through diversifying selection. (in review, *Global Change Biology*)

Fay, P.A., J.M. Blair, M.D. Smith, J.B. Nippert, J.D. Carlisle, and A.K. Knapp. Coupled effects of precipitation variability and warming on ecosystem function in grassland. (in review, *Ecological Applications*)

La Pierre, K.J. S. Yuan, C.C. Chang, M.L. Avolio, L. Hallett, T. Schreck, and M.D. Smith. Explaining temporal variation in aboveground productivity in a mesic grassland: the role of climate and flowering. (in review, *Journal of Ecology*)

Adler, P.B. and 56 co-authors. Get over the hump: productivity does not predict fine-scale species richness. (submitted, *Science*)

Avolio, M.L., J.M. Beaulieu, E.Y.Y. Lo, and M.D. Smith. Measuring genetic diversity in ecological studies. (submitted, *Journal of Ecology*)

- Smith, M.D., B.W. van Wilgen, C.E. Burns, N. Govender, S.J. Andelman, H.C. Biggs, J. Kruger, A.L.F. Potgieter, and W.S. Trollope. Long-term effects of fire frequency and season on herbaceous vegetation in South African savannas. (submitted, *International Journal of Ecology*)
- Yuan, S., J. Bai, K.A. Garrett, S.H. Hulbert, J.E. Leach, A. Sahel, P.S. Schnable, A.K. Knapp, and M.D. Smith. Transcriptional responses of two dominant C₄ grasses to climate change. (submitted, *Journal of Ecology*)
- Burkepile, D., Burns, C.E., A.D. Zinn, N. Govender, G.M. Buis, and M.D. Smith. The distribution of large herbivores in a fire-managed savanna grassland: assessing the role of bottom-up processes (in prep for *Oikos*)
- Chang, C.C. and M.D. Smith. Plant diversity and invasion resistance: the role of population vs. community level diversity. (in prep for *Oecologia*)
- Chang, C.C. and M.D. Smith. Genetic diversity of a dominant grass species: effects of fire and its relationship with species diversity and productivity in the tallgrass prairie. (in prep for *Ecology*)
- Smith, M.D. Climate change and invasion: effects of inter- vs. intra-annual variation in precipitation. (in prep (a) for *Ecology*)
- Smith, M.D. Interactive effects of warming and extreme rainfall regimes on plant community dynamics in a mesic grassland. (in prep (b) for *Global Change Biology*)
- Smith, M.D. The Nutrient Network: a global research cooperative. (in prep for *Frontiers of Ecology and the Environment*)
- Yuan, S. and M.D. Smith. Extending MapMan Ontology to maize and its application to genomic responses of two C₄ grasses to climate change. (in prep for *Molecular Ecology*)

Book Chapters:

- Knapp, A.K., J.K. McCarron, A.M. Silletti, G.A. Hoch, J.L. Heisler, M.S. Lett, J.M. Blair, J.M. Briggs, and M.D. Smith. 2008. Ecological consequences of the replacement of native grassland by *Juniperus virginiana* and other woody plants. Pages 156-169 in O.W. Van Auken (ed) *Ecological Studies Vol. 196, Western North American Juniperus Communities: a Dynamic Vegetation Type*. Springer-Verlag, NY.
- Knapp, A.K., M.D. Smith, D.P.C. Peters, and S.L. Collins. Patterns of net primary production across sites. In *Long-term Trends in Ecological Systems: A Basis for Understanding Responses to Global Change* (eds. D.P.C. Peters, C.M. Laney, A.E. Lugo, S.L. Collins, C.T. Driscoll, P.M. Groffman, J.M. Grove, A.K. Knapp, M.D. Ohman, R.B. Waide, and J. Yao). in press.

Books:

- Skelly, D.K., D.M. Post, and M.D. Smith (eds). 2011. *The Art of Ecology: Writings of G. Evelyn Hutchinson*. Yale University Press, CT.

Other Publications:

Grace, J.B., M.D. Smith, S.L. Grace, S.L. Collins and T.J. Stohlgren. 2001. Interactions between fire and invasive plants in temperate grasslands of North America. Pgs 40-65, In K. Galley and T. Wilson (Eds.), Fire Conference 2000: The First National Congress On Fire, Ecology, Prevention And Management. Invasive Species Workshop: The Role of Fire In The Control And Spread Of Invasive Species. Tallahassee: Tall Timbers Research Station.

Research Grants

Current:

NSF LTER Network Office. Long-term experiments in the LTER Network: Synthesis and hypothesis testing. 2011. Smith, M.D. (PI), with A.K. Knapp. \$19,247.

Yale Climate and Energy Institute (YCEI). Global warming impacts on CT salt marsh ecosystems and consequent effects on salt marsh vulnerability to sea level rise. 2009-2011. Smith, M.D. (PI), with A. Felson, P. Raymond, K. Seto, and E. Thomas, \$99,723.

DOE, Office of Science (BER). Bridging the divide: linking genomics to ecosystem responses to climatic change. 2009-2012. Smith, M.D. (PI), with J. Grace and A. Knapp, \$599,829.

NSF, Collaborative Research: Convergence and contingencies in savanna grasslands. 2009-2012. Smith, M.D. (PI) (Collaborators: A. Knapp, J. Blair, S. Collins), \$756,952 (Yale portion \$317,947).

NSF, Ecosystems Program, LTER VI: Grassland dynamics and long-term trajectories of change, 2009-2010, Blair, J. (PI), Subcontract to M.D. Smith, \$14,999.

Mellon Foundation, The Savanna Convergence Project: A comparative examination of the role of fire and herbivory in South African and North America grasslands. 2008-2010. Smith, M.D. (PI), \$216,106.

USDA NRI Competitive Grants Program, Managed Ecosystems Program. Grassland structure and function in response to warming and more extreme precipitation patterns, 2007-2010. \$93,182 (subcontract), with Knapp, A. (PI), J. Blair, and P. Fay.

Past:

NSF, Ecosystems Program, LTER VI: Grassland dynamics and long-term trajectories of change, 2008-2009, Blair, J. (PI), Subcontract to M.D. Smith, \$13,497.

NEON Inc. Project Office, Development and Management of the NEON Project Management Office, 2007-2009, Subaward to M.D. Smith, \$52,347.

NSF, Collaborative Research: Convergence and contingencies in savanna grasslands. 2005-2008. Smith, M.D. (Collaborators: Knapp, A. (PI), J. Blair, S. Collins), \$830,000 (Yale portion \$220,000).

NSF, Collaborative Research: LTREB-Long-Term Ecosystem Responses to More Extreme Precipitation Patterns and Warming. 2005-2010. with Knapp A. (PI), P. Fay, S. Collins. \$97,929.

DOE, Office of Science (BER). Bridging the divide: linking genomics to ecosystem responses to climatic change. 2004-2009. Smith, M.D. (PI), with J. Bai, J. Blair, P. Fay, K. Garrett, S. Hulbert, A. Knapp, J. Leach, and S. Travers, \$1,484,939.

USDA NRI Competitive Grants Program, Managed Ecosystems Program. Ecosystem responses to experimental warming and more extreme precipitation patterns. 2003-2007. Knapp, A.K. (PI), J.M. Blair, (sub-contract \$26,985).

Kansas NSF-EPSCoR Ecological Genomics Program. Linking ecological and genetic responses of grassland plant communities to environment. 2003. Smith, M.D. (PI) and A.K. Knapp, \$15,197.

Pending:

NSF, Macrosystems Biology Program. Collaborative Research: Ecosystem sensitivity to climate change: a biome-scale experimental network. 2011-2016. Knapp, A.K. (PI) (Collaborators: M.D. Smith, J.M. Blair, S.L. Collins, J. Nippert, D. Peters, W. Pockman, O. Sala), \$8,058,285 (Yale portion: \$1,167,332).

Invited Departmental Seminars

- 2010 The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA
- 2009 Yale University, Yale Institute for Biospheric Studies
Syracuse University, Department of Biology, Syracuse, NY
Yale University, Forestry and Environmental Studies
University of Kwa-Zulu Natal, South Africa Yale
- 2008 University of Kansas, Ecology and Evolutionary Biology, Lawrence, KS
- 2007 Arizona State University, School of Life Sciences, Tempe, AZ
University of Illinois, Institute for Genomic Biology, Urbana, IL
USGS, Wetlands Research Center, Lafayette, LA
University of Western Australia, School of Plant Biology, Perth, Australia
University of LaTrobe, Department of Botany, Melbourne, Australia
University of Groningen, Community and Conservation Ecology, Groningen, Netherlands
Netherlands Institute of Ecology, Wageningen, Netherlands
University of Connecticut, Department of Integrative Geosciences
- 2006 University of Colorado, Department of Ecology and Evolutionary Biology
Colorado State University, Department of Biology
- 2005 Brown University, Department of Ecology and Evolution
Marine Biological Laboratory, Woods Hole, MA
Harvard Forest, Harvard University
Stony Brook University, Department of Ecology and Evolution
- 2004 University of Minnesota Duluth, Department of Biology
Yale University, Yale Institute for Biospheric Studies
University of Arizona, Ecology and Evolutionary Biology Department
University of New Mexico, Department of Biology
- 2003 Texas Tech University, Department of Biology
National Center for Ecological Analysis and Synthesis, Santa Barbara, CA
- 2002 University of Toronto, Department of Botany
University of California Santa Barbara, Department of Ecology, Evolution and Marine Biology
University of Washington, Department of Botany
- 2001 Yale University, Department of Ecology and Evolutionary Biology
University of Wisconsin-Stevens Point, Department of Biology
University of Utah, Department of Biology

University Lectures

- 2010 Yale Colloquium on Food, Agriculture and the Environment
 2007 Yale Science Forum, Yale University
 2005 Biodiversity and Global Climate Change Teachers Institute, Peabody Museum of Natural History

Invited Presentations and Symposia

- Smith, M.D. 2010. Future Approaches to Climate Extremes Research. Extreme Climatic Events Symposium. 95th Annual Meeting of the Ecological Society of America, Pittsburg, PA.
- Smith, M.D. 2007. NEON Science: The role of experiments. Special Session: What is NEON Becoming? 92nd Annual Meeting of the Ecological Society of America, San Jose, CA.
- Smith, M.D. 2006. Dominant species and the functioning of ecosystems. LTER All Scientists Meeting, Estes Park, CO, Foundation Species Workshop.
- Smith, M.D. 2006. Bridging the divide: linking genomics to ecosystem responses to climatic change. Collaborative Plant Biology in the Rocky Mountain/Midwest: Impacts and Future Prospects for Plant Genomics, University of Wyoming, Laramie, WY. (guest speaker)
- Smith, M.D. 2005. Diversity and invasion: a problem of pattern and scale. 90th Annual Meeting of the Ecological Society of America, Montreal, Canada. (symposium)
- Smith, M.D. and D. Sax. 2004. Diversity vs. productivity: resolution of conflicting patterns of invasion. 89th Annual Meeting of the Ecological Society of America, Portland, OR. (organized oral session)
- Smith, M.D. 2004. Effects of long-term fire frequency and season treatments on herbaceous vegetation of the EBP's. Second Annual Networking Meeting, Kruger National Park, South Africa.
- Smith, M.D. 2003. Invasions of herbaceous communities in the LTER: synthesis and future directions. LTER All Scientists Meeting, Seattle, WA, Invasive Species Workshop.
- Smith, M.D. 2002. Patterns of native and nonnative species abundance across LTER sites and the invasibility of ecosystems: Results from LTER and related studies. LTER Coordinating Committee Meeting, Niwot Ridge, CO.
- Smith, M.D. 2002. Understanding invasibility: contributions to the war on exotic species. First LTER Mini-Symposium, National Science Foundation, Arlington, VA.

Selected Presentations at Scientific Meetings

[Note: 15 first-authored and 36 co-authored contributed papers since 1996]

- Smith, M.D., A.K. Knapp, J.M. Blair, A. Berdanier, D. Hoover, and S. Collins. 2006. Grassland ecosystem responses to pulsed vs. pressed inputs of nitrogen. LTER Network All Scientists Meeting, Estes Park, CO (poster presentation).
- Smith, M.D., S.E. Travers, K.A. Garrett, J. Bai, S.H. Hulbert, A.K. Knapp, J.E. Leach, and P.A. Fay. 2006. Ecological genomics: making the leap from model systems in the lab to native populations in the field. 91st Annual Meeting Ecological Society of America, Memphis, TN (oral presentation).

Smith, M.D., J. Wilcox, T. Kelly, and A.K. Knapp. 2004. Dominance not diversity determines invasion of mesic grassland. 55th Annual Meeting AIBS, Washington, D.C. (poster presentation).

Smith, M.D. and S.L. Collins. 2003. Scale-dependence of the effects of fire and grazing on spatial and temporal heterogeneity in tallgrass prairie. 88th Annual Meeting Ecological Society of America, Savanna, GA (oral presentation).

University Service

Executive Committee, Yale Climate and Energy Institute, 2010-present
 Steering Committee for Marsh Botanical Garden, 2008-present
 Faculty Advisory Board, Yale Scientific Magazine, 2006-present
 Director of Undergraduate Studies, 2008-2009
 EEB Faculty Search Committee, Yale University, 2004, 2005, 2006
 EEB Undergraduate Advisor, Class 2008, 2012, 2013

Professional Service

Editorial Boards:

Oecologia, 2007-present

Leadership Positions:

Co-Leader, NSF Dimensions of Biodiversity Design Charrette, NESCent, Durham, NC, 2010
 Organizer, Climate Extremes Symposium, 95th Annual Meeting of Ecological Society of America, Pittsburgh, PA, 2010.
 Organizer, The Nutrient Network: A Global Research Cooperative Workgroup, LTER All Scientists Meeting, Estes Park, CO, 2009
 Organizer, Dominant Plant Species Loss: A Synthesis of Community and Ecosystem Consequences Workgroup, LTER All Scientists Meeting, Estes Park, CO, 2009
 Chair, NEON Global Change Experiment Design Team, 2007-2008
 Steering Committee Member, The Nutrient Network Global Research Cooperative, 2007-present
 Co-Leader, LTER Trends NPP Workshop, Portland, OR, 2007
 Lead, NEON RFI Response: Consortium for the Global Change Experiment, 2006
 Steering Committee Member, National Ecological Observatory Network (NEON) RFI Response: Consortium for Connectivity at Continental Scales, 2006
 Coordinator, Research Initiatives II: Biodiversity Losses Workshop, LTER All Scientists Meeting, Seattle, WA, 2003

Invited Meetings, Workshops, and Working Groups:

NESCent NSF Dimensions of Biodiversity Design Charrette, 2010
 LTER Inland Climate Change Working Group, 2010
 ClimMani Workshop, Vindeln, Sweden, 2010
 DOE Office of Biological and Environmental Research Long Term Vision Workshop, 2010
 DOE-NSF Workshop: Coordinated Approaches to Address Long-term Issues in Global Change Experiments, 2009
 Intergovernmental Panel on Climate Change (IPCC) AR5 Scoping Meeting, 2009
 NSF Rapid Directional Environmental Change Workshop, 2008
 DOE Workshop on Carbon Cycling and Biosequestration, 2008
 Trait Driver Models Working Group, ARC-NZ Research Network for Vegetation Function, 2008
 DOE Genes to Ecosystems Workshop, University of Illinois, Champaign-Urbana, IL, 2007

Gene Function and Expression in Relation to Ecology Working Group, ARC-NZ Research Network for Vegetation Function, 2007

Trophic Structure Working Group, NCEAS, 2005-2007

Altered Biotic Structure/Biodiversity Working Group, LTER Planning Process, 2005-2006

NEON Science and Human Dimensions Committee, Invasive Species Subcommittee, 2005

How to Succeed in Ecology: Advice from Senior Ecologists and Rising Stars Workshop, 90th Annual Meeting of the Ecological Society of America, Montreal, Canada, 2005

LTER Meeting of 100, LTER Planning Process, Cape Canaveral, FL, 2004

NEON and Invasive Species Workshop, AIBS, 2004

Species Richness in Time and Space, LTER Working Group, 2004

PrecipNet Working Group, NCEAS, 2003

Knowledge Network for Biocomplexity Working Group, NCEAS, 2001-2004

Membership in Professional Societies:

Ecological Society of America, Sigma Xi

Panel Reviews:

Jornada LTER Site Review Panel, 2009

DOE NICCR Midwestern Region Review Panel, 2007

NSF Graduate Research Fellowship Proposal Review Panel, 2007

South Dakota State University, NSF EPSCOR Program, 2005

Proposal reviews:

National Science Foundation (NSF), Ecology and Ecosystems Programs

Department of Energy (DOE), NICCR Program

Journal reviews:

American Midland Naturalist, American Naturalist, Applied Soil Biology, Arctic, Antarctic and Alpine Research, Bulletin of the Torrey Botanical Society, Canadian Journal of Forest Research, Diversity and Distributions, Ecography, Ecological Applications, Ecology, Ecology Letters, Ecosystems, Frontiers in Ecology and the Environment, Functional Ecology, Global Change Biology, Journal of Applied Ecology, Journal of Ecology, Journal of Vegetation Science, Landscape Ecology, Methods in Ecology and Evolution, New Phytologist, PNAS, Oecologia, Oikos, Plant Ecology, Restoration Ecology, Science

Other Activities:

Judge, Braun/Buell Awards, ESA Meeting, 2005, 2006

Mentor, Kids Do Ecology, NCEAS, 2003

Supervision and Mentoring Experience

Undergraduate Senior Essays & Projects:

Amanda Bennett (Su 10)

Daron Blake (Su 08, REU)

Alexander Grindley (Sp 07)

Benjamin Harvey (Sp 07)

Andrew Joia (Sp 07)

Lauren Hallett (Su 07, Sp 08)

Anna Johnson (Sp 08)

Arjun Potter (Su 10, REU)

Runqi Song (Su 10)

Dissertation Committees: Jeremy Beaulieu, Erika Edwards, Anne Greenberg, Torrence Hanley, Manja Holland, Ashley Keiser, Erika Schielke, Stephen Smith, Annika Walters

Graduate Students:

Dominique Gilbert (MSc, FES, 2007-2009, co-advisor)
Sindiso Chamane (MSc, University of Kwa-Zulu Natal, 2009-present, co-advisor)
Cynthia Chang (2005-present)
Meghan Avolio (2006-present)
Kimberly Komatsu (2007-present)
Elisabeth Forrestel (2009-present)
Charles Munford (MSc, FES, 2009-2011, co-advisor)
Karin Burghardt (2010-present)

Post-doctoral fellows:

Dr. Catherine Burns, Yale University (2004-2006), Director of Science, The Nature Conservancy
Dr. Deron Burkpile, Georgia Tech University (2006-2008), Assistant Professor at Florida International University
Dr. Kate Matchett, University of Kwa-Zulu Natal (2010)
Dr. Weihong Wang, University of Virginia (2009-2010)
Dr. Nicole Hagenah, University of Groningen (2009-present)
Dr. Shenghua Yuan, University of Georgia (2007-present)