

John M. Blair

Division of Biology – Kansas State University
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<u>Education</u>	Ph.D.	1987	University of Georgia, Athens, GA	Entomology (Ecology emphasis)
	M.S.	1983	Kent State University, Kent, OH	Biology
	B.S.	1980	Kent State University, Kent, OH	Biology

Positions Held

2018-present	Director, Konza Prairie Biological Station, Kansas State University
2008-present	Edwin G. Brychta Professor of Biology, Division of Biology, Kansas State University
2006-present	University Distinguished Professor, Division of Biology, Kansas State University
2001-2006	Professor, Division of Biology, Kansas State University
1997-2001	Associate Professor, Division of Biology, Kansas State University
1992-1997	Assistant Professor, Division of Biology, Kansas State University
1991-1992	Research Scientist, Dept Entomology (Soil Ecology Program), Ohio State University
1988-1991	Senior Researcher, Dept Entomology (Soil Ecology Program), Ohio State University
1987-1988	Postdoctoral Associate, Department of Entomology, University of Georgia

Research Interests

Ecosystem ecology and terrestrial biogeochemistry; Grasslands and global change; Soil ecology, including decomposition, soil nutrient cycling, litter/soil/plant nutrient dynamics; Effects of climate change and other disturbances on ecosystem processes; Restoration ecology; Ecology of soil invertebrates.

Professional Societies

American Association for the Advancement of Science, Fellow
American Institute of Biological Sciences
Ecological Society of America, Fellow
Soil Ecology Society (President 1996-1997)

Professional Activities, Recognition and Awards

Recipient, Iman Outstanding Faculty Award for Research, KSU Alumni Association, 2015
Elected Fellow of the Ecological Society of America, 2015
Elected Fellow of the American Association for the Advancement of Science, 2012
University Professorial Performance Awards, KSU (2008, 2014, 2020)
Contributions to NSF/Long-Term Ecological Research (LTER) activities:
Lead PI, Konza Prairie LTER Program, 1999-2017
Member, LTER Executive Board, 2011-2014
Member, LTER Coordinating Committee/Science Council, 1999-2017
Chair, LTER Science Council Meeting Planning Committee, 2011
Member, LTER Inland Climate Change Working Group, 2010-2011
Member, LTER Network Science Conference Committee, 2005-2006
Member, LTER Network Science Working Group (Biogeochemistry), 2004-2005
Member, LTER Technology Committee, 1999
Contributions to NSF/National Ecological Observatory Network (NEON) activities:
Member, National Ecological Observatory Network (NEON, Inc.) Board of Directors, 2009-2011
Chair, NEON, Inc. Governance Committee, 2010-2011
Member, NEON, Inc. Roadmap Development Group, 2010-2011
Member Representative for KSU, NEON, Inc., 2007-2016
Member, NEON Design Consortium, Science and Human Dimensions Committee, Biogeochemical Cycles Subcommittee, 2004-2005
Member, Consortium for Regional Ecological Observatories (COREO), 2004-2007
Member, Pre-Proposal Review Panel, NSF Ecosystems Program, 2016

Member, Review Panel, SESYNC-LTER Postdoctoral Fellowship Program, 2016
Invited Participant, Grassland Indicators Technical Team, USGCRP National Climate Assessment, 2013
Invited Workshop Participant, Frontiers in Ecosystem Science: Energizing the Research Agenda, 2012
Scientific Consultant for the Flint Hills Discovery Center, 2009-2012
Invited Reviewer, US Forest Service's *Assessment of Nitrogen Deposition Effects and Empirical Critical Loads of Nitrogen for Ecoregions of the United States*, 2009
Member, Review Panel, NSF Frontiers in Integrated Biology Research Program, 2007
Invited Participant, Interagency Ecosystems Working Group for the Climate Change Science Plan, 2004
Member, Review Panel, EPA STAR Fellowship Program, 2004
Member, Review Panel, NSF BE-Coupled Biogeochemical Cycles Program, 2003-2004
Member, College of Reviewers for the Canada Research Chairs Program, 2002-2010
Scientific Consultant for the PBS documentary *Last Stand of the Tallgrass Prairie*, 1999-2001
Member, Review Panel, NSF Integrated Research Challenges in Environ Biology Program, 1999-2000
Invited Reviewer, US Global Change Research Program's National Assessment Synthesis Team (NAST) report on *Potential Consequences of Climate Variability and Change for the United States*, 1999
Recipient, W. L. Stamey Undergraduate Teaching Award, College of Arts and Sciences, KSU, 1998
Member, Review Panel, NASA/NSF/DOE/USDA/EPA/NOAA TECO Program, 1998
Member, Editorial Board, *Ecology/Ecological Monographs* (Ecological Society of America), 1997-2000
Chair, NSF/LTER site review team, 1997
Member, Editorial Board, *Applied Soil Ecology*, 1995-1997
Invited Reviewer, U.S. government review of the *Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change (IPCC) Working Group II*, 1995
Member, Review Panel, NSF Dissertation Research Award Program, 1995
Member, Editorial Board, *Biology and Fertility of Soils*, 1994-1997
Member, NSF site review team, Research Training Group (RTG) in Biogeochemistry, 1994
Member, Review Panel, USDA/NRICGP Forest/Rangeland/Crop Ecosystems Program, 1993
Fellowship recipient, OECD Cooperative Research Project on Biological Resource Management, 1990
Recipient, Outstanding Ph.D. Student Award, Department of Entomology, UGA, 1987
Recipient, University of Georgia Competitive University-Wide Assistantships, 1985-1987
Recipient, University of Georgia Foundation Scholarship Award, 1983

Selected University Service

Associate Director, KSU Division of Biology, 2008-2020
Member, Faculty Search Committee (Ecology), KSU Division of Biology, 2018-2019
Chair, Faculty Search Committee (Ecology), KSU Division of Biology, 2017-2018
Member, Search Committee for Dean of College of Arts and Sciences, KSU, 2016-2017
Member, Vice President of Research Search Committee, KSU, 2015-16
Chair, Chief Financial Officer Search Committee, KSU Division of Biology, 2014
Chair, Faculty Search Committee (Microbial Ecology), KSU Division of Biology, 2012-2013
President, University Distinguished Professor Group, KSU, 2011-2012
Member, Vice Provost for Undergraduate Studies Search Committee, KSU, 2012
Member, KSU 2025 Committee on Research, Scholarly and Creative Activities, and Discovery, 2011
Member, Dean of Arts and Sciences Search Committee, KSU, 2008-2009
Chair, Interim Director Search Committee, KSU Division of Biology, 2009
Chair, Biology Research and Instruction Enhancement Fund (BRIEF) Committee, KSU Division of Biology, 2008-2018
Chair, Tenure and Promotion Committee, KSU Division of Biology, 2007-2018
Member, College Committee on Planning, KSU College of Arts and Sciences, 2003-2006
Member, Dean's Advisory Committee, KSU College of Arts and Sciences, 2002-2005
Member, Tenure and Promotion Committee, KSU Division of Biology, 2001- 2007, 2021-2022
Chair, Faculty Search Committee (Terrestrial Ecology), KSU Division of Biology, 1998-1999
Member, Graduate Affairs Committee, KSU Division of Biology, 1994-2008

Educational Activities

Courses Taught

Ecology (BIOL 529), 1993 - present
Nutrient Dynamics (BIOL 826), 1994 - present
Principles of Biology (BIOL 198), 1992 - 2006
Ecology Laboratory (BIOL 632), 2003 - 2008
Presentations in Ecology (BIOL 862), 1994 - 2002

Graduate Students Advised

Heather A. O'Lear, M.S. 1996, Kansas State University (employed in private sector)
Chris Bakker, M.S. 1998, University of Groningen - local supervisor for visiting student (currently policy maker for Het Utrechts Landschap, The Netherlands)
Mac A. Callahan, Ph.D. 2000, Kansas State University (currently Research Ecologist, USDA Forest Service, Athens, GA)
Mark D. Norris, M.S. 2000, Kansas State University (currently Professor, Biology Department, Stevenson College, Stevenson, MD)
Sara G. Baer, Ph.D. 2001, Kansas State University (currently Professor, EEB, and Director, Kansas Biological Survey, University of Kansas, Lawrence, KS)
Chris W. Harper, M.S. 2002, Kansas State University (currently Private Lands Biologist, US Fish and Wildlife Service, Austin, TX)
G.F. (Ciska) Veen, M.S. 2004, University of Groningen - local supervisor for visiting student (currently Post-doc at Netherlands Institute of Ecology, Wageningen, The Netherlands)
Elske Koppelaar, M.S. 2004, University of Groningen - local supervisor for visiting student (currently Ph.D. student, University of Groningen, The Netherlands)
Duane Kitchen, Ph.D. 2005, Kansas State University (former Associate Professor, Biology, Rockford College, Rockford, IL)
Duncan McKinley, Ph.D. 2006, Kansas State University (currently Ecologist and Policy Analyst, U.S. Forest Service Washington, D.C.)
Kathryn N. Schmitt McCain, Ph.D. 2008, Kansas State University (currently Environmental Planning Section Chief, US Corp of Army Engineers, St. Louis, MO)
Steven Rostkowski, M.S. 2010, Kansas State University (employed in private sector)
Dan L. Carter, Ph.D. 2013, Kansas State University (currently Senior Biologist, Southeastern Wisconsin Regional Planning Commission, Waukesha, WI)
Michael Carson, M.S. 2013, Kansas State University (currently post-doc at University of Alberta)
Nicole Stanton, M.S. 2014, Kansas State University (currently Instructor, UMKC School of Biological Sciences)
Kent Connell, Ph.D. 2020, Kansas State University (currently post-doc at University of Michigan)
Caitlin Broderick, PhD., Michael Bartmess, M.S. (current students)

External dissertation examiner for PhD candidate at the University of Cape Town, South Africa, 2007

Post Doctoral Associates

Wilfred Singogo (1993-94), Clarence Turner (1994-95)

Undergraduate Students Mentored in Research

Jack Shaw, NSF REU, 1993
Jeffery Neel, NSF REU, 1994
Rita Schartz, NSF REU, 1994
Greg Shenk, NSF LTER, 1995
Casey Wright, NSF, 1996
Stephanie Huff, Center for Basic Cancer Research, 1997
Mandy Stone, NSF REU, 1998
Karoline Jarr, NSF REU, 1998
Jessica Allewalt, NSF REU, 1999
Anna Fiedler, NSF REU, 2000

Judd Patterson, NSF LTER, 2003
Matt LaRosh, NSF LTER, 2003-04
Brian Hollaway, NSF REU, 2004
Patrick Mollett, K-INBRE, 2005-06
Aaron Berdanier, NSF REU, 2006
Lauren Gillespie, NSF REU, 2007
Andres Andrade, NSF REU, 2007
Lori Wadell, NSF REU 2008
Steven Rosenzweig, NSF REU 2013
Mitchell Czerwinski, NSF REU 2015

Publications [$>17,600$ citations, h -index = 67 (Google Scholar 11/30/2021)]

Peer-reviewed Journal Articles

Collins, S.L., J.B. Nippert, J.M. Blair, J.M. Briggs, P. Blackmore, and Z. Ratajczak. 2021. Fire frequency, state change and hysteresis in tallgrass prairie. *Ecology Letters* 24:636-647. doi: 10.1111/ele.13676.

Connell, R.K., L.H. Zeglin, and J.M. Blair. 2021. Plant legacies and soil microbial community dynamics control soil respiration. *Soil Biology & Biochemistry* 160: doi.org/10.1016/j.soilbio.2021.108350.

Connell, R.K., O'Connor, R.C., Nippert, J.B., and J.M. Blair. 2021. Spatial variation in soil microbial processes as a result of woody encroachment depends on shrub size in tallgrass prairie. *Plant and Soil* 460: 359–373. doi:10.1007/s11104-020-04813-9.

Dodds, W.K., G. Wichman, J.P. Guinnip, J. Corman, and J.M. Blair. *In press*. Assessing transport and retention of nitrate and other materials through the riparian zone and stream channel with simulated precipitation. *Methods in Ecology and Evolution*.

Harms, T.K., P.M. Groffman, L. Aluwihare, C. Craft, W.R. Wieder, S.E. Hobbie, S.G. Baer, J.M. Blair, S. Frey, C.K. Remucal, J.A. Rudgers, S.L. Collins, and the LTER OM Working Group. 2021. Patterns and trends of organic matter processing and transport: Insights from the US Long-Term Ecological Research network. *Climate Change Ecology*. <https://doi.org/10.1016/j.ecochg.2021.100025>.

Hudson, A.R. D.P.C. Peters, J.M. Blair, D.L. Childers, P.T. Doran, K. Geil, M. Gooseff, K.L. Gross, N.M. Haddad, M.A. Pastore, J.A. Rudgers, O.Sala, E., and G. Shaver. *In press*. Cross-site comparisons of climate change on drylands in the US Long-term Ecological Research network. *BioScience*.

Jones J.A, P.M. Groffman, J. Blair, F.W. Davis, H. Dugan, E.E. Euskirchen, S.D. Frey, T.K. Harms, E. Hinkley, M. Kosmala, S. Loberg, S. Malone, K. Novick, S. Record, A.V. Rocha, B.L. Ruddell, E.H. Stanley, C. Sturtevant, A. Thorpe, T. White, W.R. Wieder, L. Zhai, and K. Zhu. 2021. Synergies among environmental science research and monitoring networks: A research agenda. *Earth Futures* 9: e2020EF001631. doi:10.1029/2020EF001631.

Slette, I.J., J.M. Blair, P.A. Fay, M.D. Smith, and A.K. Knapp. 2021. Compound effects of intensified precipitation patterns and drought occur belowground in a mesic grassland. *Ecosystems* doi: 10.1007/s10021-021-00714-9.

Zinnert, J.C., J.B. Nippert, J.A. Rudgers, S.C. Pennings, G. González, M. Alber, S.G. Baer, J.M. Blair, A. Burd, S.L. Collins, C. Craft, D. Di Iorio, W.K. Dodds, P.M. Groffman, E. Herbert, C. Hladik, F. Li, M. Litvak, S. Newsome, J. O'Donnell, W. Pockman, J. Schalles, and D.R. Young. 2021. State changes: insights from the U.S. Long Term Ecological Research Network. *Ecosphere* 12:e03433. doi:10.1002/ecs2.3433

Baer, S.G., T. Adams, D.A. Scott, J.M. Blair, and S.L. Collins. 2020. Soil heterogeneity increases plant diversity after twenty years of manipulation during grassland restoration. *Ecological Applications* 30:e02014. doi.org/10.1002/eap.2014.

Connell, R.K., J.B. Nippert, and J.M. Blair. 2020. Three decades of divergent land use and plant community change alters soil C and N content in tallgrass prairie. *Journal of Geophysical Research: Biogeosciences* 125:e2020JG005723. doi:10.1029/2020JG005723.

Risch A.C., S. Zimmermann, B. Moser, M. Schütz, F. Hagedorn, J. Firn, P.A. Fay, P.B. Adler, L.A. Biederman, J.M. Blair, E.T. Borer, A.A.D. Broadbent, C.S. Brown, M.W. Cadotte, M.C. Caldeira, K.F. Davies, A. di Virgilio, N. Eisenhauer, A. Eskelinen, J.M.H. Knops, A.S. MacDougall, R.L. McCulley, B.A. Melbourne, J.L. Moore, S.A. Power, S.M. Prober, E.W. Seabloom, J. Siebert, M.L. Silveira, K.L. Speziale, C.J. Stevens, P.M. Tognetti, R. Virtanen, L. Yahdjian, and R. Ochoa-Hueso. 2020. Global impacts of fertilization and herbivore removal on soil net nitrogen mineralization are modulated by local climate and soil properties. *Global Change Biology* 26:7173-7185. doi:10.1111/gcb.15308.

Caplan, J.S., D. Giménez, D.R. Hirmas, N.A. Brunsell, J.M. Blair, and A.K. Knapp. 2019. Decadal-scale shifts in soil hydraulic properties induced by altered precipitation. *Science Advances* 5:eaau6635. doi: 10.1126/sciadv.aau6635.

Carson, C.M., A. Jumpponen, J.M. Blair, and L.H. Zeglin. 2019. Soil fungal community changes in response to long-term fire cessation and N fertilization in tallgrass prairie. *Fungal Ecology* 41:45-55. doi.org/10.1016/j.funeco.2019.03.002.

Komatsu, K.J., M. Avolio, N. Lemoine, F. Isbell, E. Grman, G. Houseman, S. Koerner, D. Johnson, K. Wilcox, J. Alatalo, J. Anderson, R. Aerts, S. Baer, A. Baldwin, J. Bates, C. Beierkuhnlein, R. Belote, J. Blair, J. Bloor, P. Bohlen, E. Bork, E. Boughton, W. Bowman, A. Britton, J. Cahill Jr., E. Chaneton, N. Chiariello, J. Cheng, S. Collins, J. Cornelissen, G. Du, A. Eskelinen, J. Firn, B. Foster, L. Gough, K. Gross, L. Hallett, X. Han, H. Harmens, M. Hovenden, A. Jagerbrand, A. Jentsch, C. Kern, K. Klanderud, A. Knapp, J. Kreyling, W. Li, Y. Luo, R. McCulley, J. McLaren, J. Magonigal, J. Morgan, V. Onipchenko, S. Pennings, J. Prevéy, J. Price, P. Reich, C. Robinson, F. Russell, O. Sala, E. Seabloom, M. Smith, N. Soudzilovskaia, L. Souza, K. Suding, K. Suttle, T. Svejcar, D. Tilman, P. Tognetti, R. Turkington, S. White, Z. Xu, L. Yahdjian, Q. Yu, P. Zhang, Y. Zhang. 2019. Global change effects on plant communities are magnified by time and the number of global change factors imposed. *Proceedings of the National Academy of Sciences* 116:17867-17873. doi/10.1073/pnas.1819027116.

Risch, A.C., S. Zimmermann, R. Ochoa-Hueso, M. Schütz, B. Frey, J.L. Firn, P.A. Fay, F. Hagedorn, E.T. Borer, E.W. Seabloom, W.S. Harpole, J.M.H. Knops, R.L. McCulley, A.A.D. Broadbent, C.J. Stevens, M.L. Silveira, P.B. Adler, V.S. Báez Jacome, L.A. Biederman, J.M. Blair, C.S. Brown, M.C. Caldeira, S.L. Collins, P. Daleo, A. di Virgilio, A. Ebeling, N. Eisenhauer, E. Esch, A. Eskelinen, N. Hagenah, Y. Hautier, K.P. Kirkman, A.S. MacDougall, J.L. Moore, S.A. Power, S.M. Prober, C. Roscher, M. Sankaran, J. Siebert, K. L. Speziale, P.M. Tognetti, R. Virtanen, L. Yahdjian, and B. Moser. 2019. Soil net nitrogen mineralisation across global grasslands. *Nature Communications* 10:4981 doi.org/10.1038/s41467-019-12948-2.

Scott, D.A., S.T. Rosenzweig, S.G. Baer and J.M. Blair. 2019. Changes in potential nitrous oxide efflux during grassland restoration. *Journal of Environmental Quality* 48:1913-1917. doi:10.2134/jeq2019.05.0187.

Smith, M.D., S.E. Koerner, A.K. Knapp, M.L. Avolio, F.A. Chaves, E.M. Denton, J. Dietrich, D.J. Gibson, J. Gray, A.M. Hoffman, D.L. Hoover, K.J. La Pierre, A. Silletti, K.R. Wilcox, Q. Yu, and J.M. Blair. 2019. Mass ratio effects underlie ecosystem responses to environmental change. *Journal of Ecology* doi: 10.1111/1365-2745.13330.

Welti, E., Q. Fan, H. Tetreault, M. Ungerer, J. Blair and A. Joern. 2019. Fire, grazing and climate shape plant-grasshopper interactions in a tallgrass prairie. *Functional Ecology* 33:735-745. doi.org/10.1111/1365-2435.13272.

Petrie, M.D., D.P.C. Peters, J. Yao, J.M. Blair, N.D. Burruss, S.L. Collins, J.D. Derner, L.A. Gherardi, J.R. Hendrickson, O.E. Sala, P.J. Starks, and J.L. Steiner. 2018. Regional grassland productivity responses to precipitation during multi-year above- and below-average rainfall periods: Consequences for responses under climate change. *Global Change Biology* 24:1935-1951. doi:10.1111/gcb.14024.

Manning, G., J.M. Blair and S.G. Baer. 2017. Effects of grazing and fire frequency on floristic quality and its relationship to indicators of soil quality in tallgrass prairie. *Environmental Management* 60:1062-1075.

Scott, D.A., S.G. Baer and J.M. Blair. 2017. Recovery and relative influence of root, microbial, and structural properties of soil on physically sequestered carbon stocks in restored grassland. *Soil Science Society of America Journal* 81:50-60. doi:10.2136/sssaj2016.05.0158.

Baer, S.G., J.M. Blair and S.L. Collins. 2016. Environmental heterogeneity has a weak effect on diversity during community reassembly in tallgrass prairie. *Ecological Monographs* 86:94-106.

Briggs, J.M., J.M. Blair and E. Horne. 2016. Ecohydrological and climate change Studies at the Konza Prairie Biological Station. *Transactions of the Kansas Academy of Science* 119:5-11.

Jones, S.K., S.L. Collins, J.M. Blair, M.D. Smith and A.K. Knapp. 2016. Altered rainfall patterns increase forb abundance and richness in native tallgrass prairie. *Scientific Reports* 6, 20120; doi: 10.1038/srep20120.

Crowther, T.W., K.E.O. Todd-Brown, C.W. Rowe, W.R. Wieder, J.C. Carey, M.B. Machmuller, B.L.

- Snoek, S. Fang, G. Zhou, S.D. Allison, J.M. Blair, S.D. Bridgman, A.J. Burton, Y. Carrillo, P.B. Reich, J.S. Clark, A.T. Classen, F.A. Dijkstra, B. Elberling, B.A. Emmett, M. Estiarte, S.D. Frey, J. Guo, J. Harte, L. Jiang, B.R. Johnson, G. Kröel-Dulay, K.S. Larsen, H. Laudon, J.M. Lavelle, Y. Luo, M. Lupascu, L.N. Ma, S. Marhan, A. Michelsen, J. Mohan, S. Niu, E. Pendall, J. Peñuelas, L. Pfeifer-Meister, C. Poll, S. Reinsch, L.L. Reynolds, I.K. Schmidt, S. Sistla, N.W. Sokol, P.H. Templer, K.K. Treseder, J.M. Welker and M.A. Bradford. 2016. Quantifying global soil carbon losses in response to warming. *Nature* 540:104–108.
- Rosenzweig, S.T., M.A. Carson, S.G. Baer and J.M. Blair. 2016. Changes in soil properties, microbial biomass, and fluxes of C and N in soil following post-agricultural grassland restoration. *Applied Soil Ecology* 100:186-194.
- Smith M.D., A.K. Knapp, S.L. Collins, D.E. Burkepile, K.P. Kirkman, S.E. Koerner, D.I. Thompson, J.M. Blair, C.E. Burns, S. Eby, E.J. Forrestel, R.W.S. Fynn, N. Govender, N. Hagenah, D.L. Hoover, K.R. Wilcox. 2016. Shared drivers but divergent ecological dynamics: insights from long-term experiments in savanna grasslands. *BioScience* 66:666-682.
- Wilcox, K.R., J.M. Blair and A.K. Knapp. 2016. Stability of grassland soil C and N pools despite 25 years of an extreme climatic and disturbance regime. *Journal of Geophysical Research: Biogeosciences* 121:934–1945.
- Wilcox, K.R., J.M. Blair, M.D. Smith, and A.K. Knapp. 2016. Does ecosystem sensitivity to precipitation at the site-level conform to regional-scale predictions? *Ecology* 97:561-568.
- Koerner, S.E., S.L. Collins, J.M. Blair, A.K. Knapp and M.D. Smith. 2014. Rainfall variability has minimal effects on grassland recovery from repeated grazing. *Journal of Vegetation Science* 25:36-44.
- Ratajczak, Z., J.B. Nippert, J.M. Briggs and J.M. Blair. 2014. Fire dynamics distinguish grasslands, shrublands and woodlands as alternative attractors in the Central Great Plains of North America. *Journal of Ecology* 102:1374-1385.
- Carter, D.L and J.M. Blair. 2013. Seed source has variable effects on species, communities, and ecosystem properties in grassland restorations. *Ecosphere* 4:art93.
- Coolon, J.D., K.L. Jones, TC. Todd, J.M. Blair, and M.A. Herman. 2013. Long-term nitrogen amendment alters the diversity and assemblage of soil bacterial communities in tallgrass prairie. *PLoS ONE* 8(6): e67884. doi:10.1371/journal.pone.0067884.
- Reisinger, A.J., J.M. Blair, C.W. Rice and W.K. Dodds. 2013. Woody vegetation removal stimulates riparian and benthic denitrification in tallgrass prairie. *Ecosystems* 16:547-560
- An, N., K.P. Price and J.M. Blair. 2013. Estimating aboveground net primary productivity of the tallgrass prairie ecosystem of the Central Great Plains using AVHRR NDVI. *International Journal of Remote Sensing* 34:3717-3735.
- Brozostek, E.R., J.M. Blair, J.S. Dukes, S.D. Frey, S.E. Hobbie, J.M. Melillo, R.J. Mitchell, E.S. Pendall, P.B. Reich, G.R. Shaver, A. Stefanskii, M.G. Tjoelker and A.C. Finzi. 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
- Carter, D.L. and J.M. Blair. 2012. High richness and dense seeding enhance grassland restoration establishment, but have little effect on drought response. *Ecological Applications*. 22:1308–1319.
- Carter, D.L. and J.M. Blair 2012. Seed source affects establishment and survival for three grassland species sown into reciprocal common gardens. *Ecosphere* 3:art102.
- Carter, D.L. and J.M. Blair. 2012. Recovery of native plant community characteristics on a chronosequence of restored prairies seeded into pastures in West-Central Iowa. *Restoration Ecology*. 20: 170–179.
- Carter, D., B. VanderWeide and J.M. Blair. 2012. Drought-mediated stem and belowground bud dynamics in restored grasslands. *Applied Vegetation Science* 15:470-478.

- Knapp, A.K., D.L. Hoover, J.M. Blair, G. Buis, D.E. Burkepile, A. Chamberlain, S.L. Collins, R.W.S. Fynn, K.P. Kirkman, M.D. Smith, D. Blake, N. Govender, P. O'Neal, T. Schreck, A. Zinn. 2012. A test of two mechanisms proposed to optimize grassland aboveground primary productivity in response to grazing. *Journal of Plant Ecology* 4:357-365.
- Fay, P.A., J.M. Blair, M.D. Smith, J.B. Nippert, J.D. Carlisle, and A.K. Knapp. 2011. Relative effects of precipitation variability and warming on tallgrass prairie ecosystem function. *Biogeosciences* 8:3053-3068.
- McCain, K.N.S., G.W.T. Wilson, and J.M. Blair. 2011. Mycorrhizal suppression alters plant productivity and forb establishment in a grass-dominated prairie restoration. *Plant Ecology* 212:1675-1685.
- Ippolito, J.A., S.W. Blecker, C.L. Freeman, R.L. McCulley, J.M. Blair, and E.F. Kelly. 2010. Phosphorus biogeochemistry across a precipitation gradient in grasslands of central North America. *Journal of Arid Environments* 74:954-961.
- Jangid, K., M.A. Williams, A.J. Franzluebbers, J.M. Blair, D.C. Coleman and W.B. Whitman. 2010. Development of soil microbial communities during tallgrass prairie restoration. *Soil Biology & Biochemistry* 42:302-312.
- Jumpponen, A., K.L. Jones, and J.M. Blair. 2010. Vertical distribution of fungal communities in tallgrass prairie soil. *Mycologia* 102:1027-1041.
- McCain, K.N.S., S.G. Baer, J.M. Blair, and G.W.T. Wilson. 2010. Dominant grasses suppress local diversity in restored tallgrass prairie. *Restoration Ecology* 18:40-49.
- 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.
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Book Chapters

Alber, M., J. Blair, C.T. Driscoll, H. Ducklow, T. Fahey, W.R. Fraser, J.E. Hobbie, D.M. Karl, S.E. Kingsland, A. Knapp, E.B. Rastetter, T. Seastedt, G.R. Shaver, and R.B. Waide. Sustaining long-term ecological research: Perspectives from inside the LTER program. Pages 81-116 In *The Challenges of Long-Term Ecological Research: A Historical Analysis* (R.B. Waide and S.E. Kingsland, eds.), Springer Nature, Switzerland.

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Major Grants Funded (approx. \$40M in funded projects; \$22M as PI and \$18M as Co-PI)

Collaborative Research: LTREB: The Role of Ecological Heterogeneity in a Long-Term Grassland Restoration Experiment J.M. Blair (PI-KSU)

Funding Agency: NSF Long-Term Research in Environmental Biology

Period Covered: 2019 – 2024

Award Amount: \$136,242 (KSU portion of a collaborative grant with KU totaling \$600,000)

Infrastructure improvements in support of grassland and native grazer research at Konza Prairie Biological Station. E. Horne (PI), J.M. Blair (Co-PI).

Funding Agency: NSF Biological Infrastructure (FSML) Program

Period Covered: 2017 – 2020

Award Amount: \$224,935

LTER VII: Long-term research on grassland dynamics- Assessing mechanisms of sensitivity and resilience to global change. J.M. Blair (PI: 2014-2017), J.B. Nippert (PI: 2017-2020), S.G. Baer, W.K. Dodds, and others

Funding Agency: NSF Long-Term Ecological Research Program

Period Covered: 2014 – 2020

Award Amount: \$6,762,000 (+\$49,998 in supplements to date)

Collaborative Research: Rhizosphere priming and C-N dynamics in grassland ecosystems in transition. J.M. Blair (PI-KSU)

Funding Agency: NSF Ecosystem Studies

Period Covered: 2014 – 2018

Award Amount: \$305,665 (KSU portion of collaborative grant with UCSC and OSU totaling \$850,000)

Collaborative Research: Does the legacy of long-term chronic climate change alter ecosystem responses to short-term climatic extremes? J.M. Blair (PI-KSU)

Funding Agency: NSF Ecosystem Studies

Period Covered: 2013 – 2017

Award Amount: \$299,903 (KSU portion of collaborative grant with CSU totaling \$948,875)

Collaborative Research: LTREB: The role of ecological heterogeneity in a long-term grassland restoration experiment. J.M. Blair (PI-KSU)

Funding Agency: NSF Long-Term Research in Environmental Biology

Period Covered: 2012 – 2019

Award Amount: \$131,087 (KSU portion of a collaborative grant with SIU totaling \$450,000)

Collaborative research: Convergence and contingencies in savanna grasslands. J.M. Blair (PI-KSU)

Funding Agency: NSF Ecosystem Studies

Period Covered: 2009 – 2012

Award Amount: \$64,063 (KSU portion of a collaborative grant with Yale and CSU totaling \$707,000)

LTER VI: Grassland dynamics and long-term trajectories of change. J.M. Blair (PI), W.K. Dodds, D.C. Hartnett, A. Joern, J.B. Nippert and others

Funding Agency: NSF Long-Term Ecological Research Program

Period Covered: 2008 – 2014

Award Amount: \$6,164,830

Interactive effects of altered rainfall timing and elevated temperature on soil communities and processes. J.M. Blair (PI-KSU)

Funding Agency: DOE/NICCR

Period Covered: 2007 – 2011

Award Amount: \$446,765 (KSU portion of a collaborative grant with CSU totaling \$622,552)

Grassland structure and function in response to warming and more extreme precipitation patterns. A.K. Knapp (PI), J.M. Blair (Co-PI), and M.D. Smith

Funding Agency: UDSA/NRI Managed Ecosystems Program
Period Covered: 2007 – 2010
Award Amount: \$399,648 (\$148,108 subcontract to KSU)

En-Gen: Ecological genomics of soil nematode community responses: Model and non-model approaches. M.H. Herman (PI), K.L. Jones, T.C. Todd and J.M. Blair (Co-PI)

Funding Agency: NSF Environmental Genomics Program
Period Covered: 2007 – 2010
Award Amount: \$622,598

Understanding and forecasting ecological change: Causes, trajectories and consequences of environmental change in the Central Plains. W.K. Dodds (PI), J.M. Blair (Co-PI), and J. Harrington

Funding Agency: NSF EPSCoR Program
Period Covered: 2006 – 2009
Award Amount: \$3,488,700

Collaborative research: Convergence and contingencies in savanna grasslands. A.K. Knapp (PI-CSU), J.M. Blair (PI-KSU), M. Smith (PI-Yale) and S.L. Collins (PI-UNM)

Funding Agency: NSF Ecology & Ecosystems Programs
Period Covered: 2005 – 2008
Award Amount: \$150,000 (KSU portion of a collaborative grant totaling \$830,000)

Collaborative research: LTREB- Long-term ecosystem responses to more extreme precipitation patterns and warming. J.M. Blair (PI-KSU)

Funding Agency: NSF LTREB Program
Period Covered: 2005 – 2010
Award Amount: \$202,065 (KSU portion of a collaborative grant totaling \$300,000)

Effects of altered rainfall timing and warming on soil processes and plant responses in a grassland ecosystem. J.M. Blair (PI), A.K. Knapp and P.A. Fay

Funding Agency: DOE/NICCR
Period Covered: 2006 – 2007
Award Amount: \$135,837

Effects of altered rainfall timing and warming on soil processes and plant responses in a grassland ecosystem. J.M. Blair (PI), A.K. Knapp and P.A. Fay

Funding Agency: DOE/NIGEC
Period Covered: 2005 – 2006
Award Amount: \$133,500

Bridging the divide: Linking genomics to ecosystem responses to climatic change. M.D. Smith (PI), J. Bai, J.M. Blair (Co-PI), P.A. Fay, K. Garrett, S. Hulbert, A.K. Knapp, J. Leach and S. Travers.

Funding Agency: DOE, Office of Science (BER), Program for Ecosystem Research
Period Covered: 2004 – 2007
Award Amount: \$1,484,939

Strategically positioning K-State to benefit from NSF's CUAHSI and NEON programs. D.R. Steward (PI), J.M. Blair (Co-PI) and J. K. Koelliker.

Funding Agency: KSU Provost's Targeted Excellence Program
Period Covered: 2005 – 2007
Award Amount: \$381,790

Functional genomic approaches to study organismal response to global environmental change. M. Herman (PI), L.C. Johnson (PI), J.M. Blair (Co-PI) and others.

Funding Agency: NSF EPSCoR Program
Period Covered: 2003 – 2006

Award Amount: \$2,091,528

Ecosystem responses to experimental warming and more extreme precipitation patterns. A.K. Knapp (PI) and J.M. Blair (Co-PI)

Funding Agency: USDA/NRI Managed Ecosystems Program
Period Covered: 2003 – 2007
Award Amount: \$300,000

Climatic variability and ecosystem response: Precipitation patterns, soil moisture dynamics, and productivity in tallgrass prairie. J.M. Blair (PI) and P.A. Fay

Funding Agency: NSF Ecosystems Program
Period Covered: 2002 – 2006
Award Amount: \$447,214

LTFR V: Long-term research on grassland dynamics and global change. J.M. Blair (PI), J.M. Briggs, D.C. Hartnett, L.C. Johnson, A.K. Knapp and others

Funding Agency: NSF Long-Term Ecological Research Program
Duration: November 1, 2002 – October 31, 2009
Award Amount: \$5,321,772

Belowground responses to multiple climate change factors: Interactive effects of warming and more extreme precipitation patterns on grassland ecosystems. J.M. Blair (PI), A.K. Knapp and P.A. Fay.

Funding Agency: DOE/NIGEC
Duration: July 1, 2002 – Sept 30, 2005
Award: \$394,475

Scaling up the ecosystem consequences of forest expansion in the Great Plains region: A renewal proposal. L.C. Johnson (PI), K. Price, J.M. Blair (Co-PI), and R.B. McKane.

Funding Agency: NASA/Land Cover and Land-Use Change Research
Duration: October 15, 2001 – October 14, 2004
Award Amount: \$575,000

International collaboration to assess comparative responses of South African and North American grasslands to fire. A.K. Knapp (PI) and J.M. Blair (Co-PI)

Funding Agency: NSF International Studies Program
Duration: February 15, 2000 – February 14, 2001
Award: \$26,232

Acquisition of an isotope ratio mass spectrometer in the KSU-UK-CU Consortium. L.C. Johnson (PI), J.M. Blair (Co-PI), W.K. Dodds, G.L. Macpherson and V. Terwilliger

Funding Agency: National Science Foundation
Duration: September 1, 1999 – August 31, 2001
Award: \$169,400

Grassland ecosystem responses to the experimental manipulation of precipitation. A.K. Knapp (PI), J.M. Blair (Co-PI) and P.A. Fay

Funding Agency: USDA/NRI Ecosystems Program
Duration: September 1, 1999 – August 31, 2002
Amount: \$253,500

Belowground responses to manipulation of precipitation timing and amounts in a grassland. J.M. Blair (PI), A.K. Knapp and P.A. Fay

Funding Agency: DOE/NIGEC
Duration: July 1, 1999 – June 30, 2002.
Amount: \$331,000

The Tallgrass Prairie of the Flint Hills: A documentary. D.C. Hartnett (PI), J.S. Altman, A.G. Larrabee, A.K. Knapp and J.M. Blair (Co-PI)

Funding Agency: NSF Informal Science Education Program

Duration: July 1, 1998 - June 30, 2000
Amount: \$383,780

Land-cover change in the Great Plains: Predicting the impacts of regional forest expansion on biogeochemical processes. L. Johnson (PI), J.M. Briggs, J.M. Blair (Co-PI), C.W. Rice, J. Ham and R.B. McKane.

Funding Agency: NASA/Land Cover and Land-Use Change Research
Duration: May 1, 1997 - April 30, 2000.
Amount: \$485,000

Evaluating the role of resource heterogeneity in restoring grasslands. A. Knapp (PI) & J.M. Blair (Co-PI).

Funding Agency: NSF Basic Research in Conservation and Restoration Biology

Duration: February 1, 1997 - September 30, 2000.
Amount: \$178,196

Experimental manipulation of variability in precipitation in grasslands. A. Knapp (PI) & J. Blair (Co-PI).

Funding Agency: USDA/NRICGP Ecosystems Program
Duration: September 1, 1996 - August 30, 1999
Amount: \$288,915

Acquisition of two controlled environmental chambers. L.C. Johnson (PI), A.K. Knapp, J.M. Blair (Co-PI), D.C. Hartnett, C.R. Rice and T.C. Todd.

Funding Agency: USDA/NRICGP Equipment Program
Duration: September 1, 1996 - August 31, 1997
Amount: \$49,171

Long-term ecological research in tallgrass prairie: The Konza Prairie LTER Program. A.K. Knapp (PI), J.M. Briggs, J.M. Blair (Co-PI) D.C. Hartnett, L.C. Johnson, D.W. Kaufman, and W.K. Dodds.

Funding Agency: NSF Long-Term Ecological Research Program
Duration: October 15, 1996 - October 14, 2002
Amount: \$4,063,236

Acquisition of high performance liquid chromatograph and gas chromatograph/mass spectrometer for studying dissipation of organic contaminants. A.P. Schwab (PI), with M.K. Banks, J.M. Blair (Co-PI), L.C. Davis, L. Erickson, F. Oehme and J. Pickrell.

Funding Agency: National Science Foundation
Duration: October 15, 1994 - October 14, 1995
Amount: \$100,000

The capacity of Ft. Riley tallgrass prairie to support military training activity- Preliminary analysis. P.S. Gipson (PI), A.K. Knapp, P.A. Fay, J.M. Blair (Co-PI), J.M. Briggs and others.

Funding Agency: USA/CERL
Duration: September 13, 1994 - May 1, 1997
Amount: \$154,380

Use of remotely sensed data on phenological activity and heterogeneity to detect changes in grassland species composition in response to stress. J.M. Briggs (PI), C.L. Turner, J.M. Blair (Co-PI), W.K. Dodds, D.G. Goodin, G.M. Henebry, M.D. Nellis and A.K. Knapp.

Funding Agency: Environmental Protection Agency
Duration: October 1, 1994 - September 30, 1997
Amount: \$210,842

Effects of record precipitation inputs on soil-plant nitrogen relationships in tallgrass prairie. J.M. Blair (PI) and C.L. Turner.

Duration: November 1, 1993 - March 31, 1995
Funding Agency: National Science Foundation
Amount: \$59,900

Effects of altered soil moisture and temperature on soil communities, primary producers and ecological processes in grasslands. J.M. Blair (PI), C.W. Rice, T.C. Todd and A.K. Knapp.

Funding Agency: DOE/NIGEC Great Plains Regional Center
Duration: July 1, 1993 - October 31, 1996.
Amount: \$234,850

Effects of earthworms on nitrogen cycling processes and decomposer community structure in organic-based and conventional agroecosystems. B.R. Stinner (PI), J.M. Blair (Co-PI) and C.A. Edwards.

Funding Agency: National Science Foundation
Duration: January 31, 1991 - February 1, 1996
Amount: \$733,093 (\$94,341 transferred to KSU, J.M. Blair PI)

Effects of resource quality and microarthropods on forest floor nitrogen dynamics. D.A. Crossley, Jr. (PI) and J.M. Blair (Co-PI).

Funding Agency: National Science Foundation
Duration: September 1, 1989 - August 31, 1992
Amount: \$220,000

Invited Presentations and Seminars (last 10 years only)

Blair, J.M. Long-term research on grassland responses to global change at Konza Prairie. University of Missouri, September 19, 2018.

Baer, S.G., G.C. Manning, J.M. Blair, S.L. Collins, D.J. Gibson, B.R. Maricle, and L.C. Johnson. Resiliency of developing grasslands to drought indicated by experimental restorations spanning space and time. Ecological Society of America meeting, August 5-10, 2018, New Orleans, LA. Invited symposium presentation.

Blair, J.M. The Konza Prairie Long-Term Ecological Research program. Grassland Restoration Network workshop, Manhattan, KS, July 11, 2017.

Blair, J.M. Assessing multiple controls of primary productivity in tallgrass prairie: The Konza Prairie LTER Program. Semester in Environmental Sciences Distinguished Scientist Seminar Series, The Ecosystems Center, Marine Biological Lab, Woods Hole, MA. Sept. 19, 2014.

Blair, J.M. (presenter), J.M. Briggs and J.B. Nippert. Fire dynamics as a control of grass-woodland transitions in mesic grasslands. International workshop on "*Abrupt grass-woodland transitions: Determinants and consequences for ecosystem services*", Punta del Este, Uruguay, December 16-19, 2012. Invited workshop presentation.

Blair, J.M. The role of long-term research in understanding and conserving grasslands in a changing world. Division of Biology Seminar, Kansas State University, November 16, 2012.

Blair, J.M. Rhizosphere processes as regulators of ecosystem dynamics: getting to the root of the matter. Ecological Society of America meeting, Portland, OR, Aug 5-10, 2012. Invited presentation at NSF-funded workshop on Frontiers in Ecosystem Science.

Blair, J.M. Konza Prairie Biological Station as a model for long-term research into grassland dynamics. Grasslands in a Global Context Symposium, Kansas State University, September 12-14, 2011. Invited symposium keynote presentation.

Blair, J.M. Fire and grazing as modulators of grassland ecosystem processes. Grasslands in a Global Context Symposium, Kansas State University, September 12-14, 2011. Invited symposium presentation.

Blair, J.M. Assessing the sensitivity of grassland ecosystems to climate change. 10th Annual LTER Symposium, National Science Foundation, March 11, 2011. Invited symposium presentation.

Jumpponen, A. and J.M. Blair. Effects of fire on belowground processes in a tallgrass prairie ecosystem. Heilongjiang Academy of Forestry, Harbin, China, August 25, 2011. Invited seminar.

Blair, J.M. Understanding grassland responses to climate change: An experimental approach. University of Hohenheim, Germany, September 7, 2010. Invited Polycom presentation for GrassNet 2010.

Blair, J.M. Grassland responses to fire, grazing & climate: How long-term research can contribute to management of grasslands in a changing world. University of California-Santa Cruz. April 26, 2010. Invited seminar.

Blair, J.M. Assessing grassland ecosystem responses to a changing climate. Department of Ecology and Evolutionary Biology, University of Kansas, February 11, 2010. Invited seminar.

Contributed Presentations (last five years only)

Hudson, A, D. Peters, M.L. Avolio, J.M. Blair, D.L. Childers, S.L. Collins, P.T. Doran, S.E. Evans, M.N. Gooseff, N.B. Grimm, A.K. Knapp, M.E. Litvak, M. Pastore, J. Rudgers, O. Sala, E.W. Seabloom, N. Haddad, and G.R. Shaver. A multi-site synthesis of impacts of multi-year extreme events on dryland ecosystem resilience. American Geophysical Union meeting, San Francisco, CA., December 7-11, 2020.

Broderick, C.M. and J.M. Blair. Legacy effects of past climate affect responses of N cycling to current climate in tallgrass prairie. Ecological Society of America meeting, August 3-6, 2020.

Wojciechowski, A., J.M. Blair, S.L. Collins, and S.G. Baer. Environmental heterogeneity increases resilience of a restored grassland to interannual variability in precipitation. Ecological Society of America meeting, August 3-6, 2020.

D. Gimenez, D., J.S. Caplan, J., D.R. Hirmas, N.A. Brunsell, J.M. Blair and A.K. Knapp. Decadal-scale shifts in soil hydraulic properties as induced by altered precipitation. Soil Science Society of America meeting, San Antonio, TX, November 10-13, 2019.

Broderick, C.M., and J.M. Blair. Climate legacies and novel precipitation regimes shape tallgrass prairie ecosystem functioning. Ecological Society of America meeting, Louisville, KY, August 12-16, 2019.

Collins, S.C., J.B. Nippert, J.M. Blair, J.M. Briggs and Z. Ratajczak. Fire frequency, state change and hysteresis in tallgrass prairie. Ecological Society of America meeting, Louisville, KY, August 12-16, 2019.

Connell, R.K., R.C. O'Connor, J.B. Nippert and J.M. Blair. Fine-scale heterogeneity in soil carbon dynamics as a result of woody encroachment into tallgrass prairie. Ecological Society of America meeting, Louisville, KY, August 12-16, 2019.

Connell, R.K. and J.M. Blair. Plant-soil history has lasting effects on belowground SOM decomposition. Ecological Society of America meeting, New Orleans, LA, August 5-10, 2018.

Scott, D.A., S.G. Baer and J.M. Blair. Soil and plant-induced heterogeneity effects on soil microbial community structure. Ecological Society of America meeting, New Orleans, LA, August 5-10, 2018.

Scott, D.A., S.G. Baer and J.M. Blair. Alterations in arbuscular mycorrhizal fungal abundance during tallgrass prairie restoration: Implications for biodiversity and ecosystem functioning. Ecological Society of America meeting, New Orleans, LA, August 5-10, 2018.

Bartmess, M. and J.M. Blair. Assessing the effects of fire season and mechanical shrub removal on re-sprouting shrub encroachment in the tallgrass prairie. LTER All Scientists Meeting, Asilomar Conference Center, Pacific Grove, CA, October 1-3, 2018.

Caplan, J., D. Gimenez, D. Hirmas, N. Brunsell, J. Blair and A. Knapp. Rapid shifts in soil hydraulic properties induced by decadal-scale precipitation change. American Geophysical Union meeting, Washington D.C., December 10-14, 2018.

- Broderick, C. and J. M. Blair. Short- and long-term effects of altered water availability on plant and soil processes in tallgrass prairie. LTER All Scientists Meeting, Asilomar Conference Center, Pacific Grove, CA, October 1-3, 2018.
- Connell, R.K., L.H. Zeglin, and J.M. Blair. Plant-soil history has lasting effects on soil organic matter decomposition. LTER All Scientists Meeting, Asilomar Conference Center, Pacific Grove, CA, October 1-3, 2018.
- Caplan, J.S., D. Giménez, D.R. Hirmas, N.A. Brunsell, J.M. Blair and A.K. Knapp. Rapid shifts in soil hydraulic properties in response to simulated rainfall. Ecological Society of America meeting, Portland, OR, Aug 6-11, 2017.
- Connell, R.K., J.B. Nippert and J.M. Blair. Changes in isotopic composition of SOM in response to burning and grazing in the tallgrass prairie. Ecological Society of America meeting, Portland, OR, Aug 6-11, 2017.
- Slette, I., J.M. Blair, D.L. Hoover, M.D. Smith and A.K. Knapp. Belowground productivity responses to extreme drought are influenced by legacies of past precipitation regimes. Ecological Society of America meeting, Portland, OR, Aug 6-11, 2017.